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## ABSTRACT

The Comprehensive School Mathematics Program (CSMP) is a program of CEMPEL, INC., one of the national educational laboratories, and is funded by the National Institute of Education. Its major purpose is the development of curriculum materials in mathematics for grades K-6. Beginning in September, 1973, CSMP began an extended pilot trial of its Elementary Program. This report describes the interviews conducted with 18 second grade teachers at the end of the 1974-75 school year. These were teachers of classes which began using CSMP materials in the first grade the previous year; students of the teachers had completed two years of the CSMP program. Teachers were generally impressed with the overall program and many specific aspects of it. Some concern was still expressed about the program meeting the needs of low ability students. (RH)

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**EXTENDED PILOT TRIALS OF THE  
COMPREHENSIVE SCHOOL MATHEMATICS PROGRAM:  
EVALUATION REPORT SERIES**

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**Evaluation Report 2-C-2  
Teacher Interviews, Second Grade**

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Extended Pilot Trial of the  
Comprehensive School Mathematics Program

Evaluation Report 2-C-2  
TEACHER INTERVIEWS, SECOND GRADE

Edward L. Barszcz

October, 1975

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## Description of Evaluation Report Series

The Comprehensive School Mathematics Program (CSMP) is a program of CEMREL, Inc., one of the national educational laboratories, and is funded by the National Institute of Education. Its major purpose is the development of curriculum materials for grades K-6.

Beginning in September, 1973, CSMP began an extended pilot trial of its Elementary Program. The pilot trial is longitudinal in nature; students who began using CSMP materials in kindergarten or first grade in 1973-74, were able to use them in first and second grades respectively in 1974-75, and will be able to use them in second and third grades in 1975-76. Hence the adjective "extended". The limited scope of these trials does not justify the term "field trial" since the major focus of the evaluation is on a limited number of classes in the metropolitan St. Louis area.

The evaluation of the program in this extended pilot trial is intended to be reasonably comprehensive and to supply information desired by a wide variety of audiences. For that reason the reports in this series are reasonably non-technical and do not attempt to widely explore some of the related research issues. The list of reports from the first two years of the extended pilot trial is given on the next page. The most comprehensive of these are the following:

- 1-A-1: Overview, Design and Instrumentation
- 1-A-3: Final Summary Report, Year 1
- and 2-A-1: Final Summary Report, Year 2

The first of these will be particularly useful to the reader in providing a description of the program, the philosophy and goals of the evaluation and the relationship of individual reports to the evaluation effort as a whole.

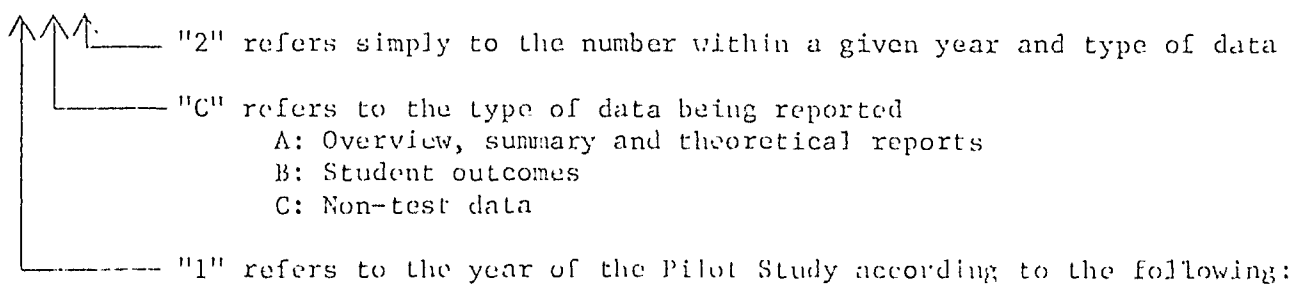
# Longitudinal Pilot Study of the Comprehensive School Mathematics Program

## Evaluation Report Series

Evaluation Report 1-A-1	Overview, Design and Instrumentation
Evaluation Report 1-A-2	External Review of CSMP Materials
Evaluation Report 1-A-3	Final Summary Report Year 1
Evaluation Report 1-B-1	Mid-Year Test Data: CSMP First Grade Content
Evaluation Report 1-B-2	End-of-Year Test Data: CSMP First Grade Content
Evaluation Report 1-B-3	End-of-Year Test Data: Standard First Grade Content
Evaluation Report 1-B-4	End-of-Year Test Data: CSMP Kindergarten Content
Evaluation Report 1-B-5	Test Data on Some General Cognitive Skills Related to CSMP Content
Evaluation Report 1-B-6	Summary Test Data: Detroit Schools
Evaluation Report 1-C-1	Teacher Training Report
Evaluation Report 1-C-2	Observations of CSMP First Grade Classes
Evaluation Report 1-C-3	Mid-Year Data from Teacher Questionnaires
Evaluation Report 1-C-4	End-of-Year Data from Teacher Questionnaires
Evaluation Report 1-C-5	Interviews with CSMP Kindergarten Teachers
Evaluation Report 1-C-6	Analysis of Teacher Logs
Evaluation Report 2-A-1	Final Summary Report Year 2
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Evaluation Report 2-B-3	Student Interviews
Evaluation Report 2-C-1	Teacher Questionnaire Data
Evaluation Report 2-C-2	Teacher Interviews, Second Grade
Evaluation Report 2-C-3	Teacher Interviews, First Grade

## Key to Indexing

1-C-2 Observations of CSMP First Grade Classes



	Kindergarten	First Grade	Second Grade	Third Grade	...
Year 1 (1973-74)					
Year 2 (1974-75)					
Year 3 (1975-76)					

## Errata Sheet for CSMP Evaluation Report 2-C-2

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### Introduction

In the fall of 1973, the Comprehensive School Mathematics Program (CSMP) began a longitudinal pilot study of its Elementary School Program. Over 100 teachers began using the program, either in first grade or kindergarten. During the 1974-75 school year, the second year of this pilot study, most of these classes continued into second grade and first grade respectively and many new classes began using CSMP materials.

For the purposes of the pilot study, classes in the St. Louis area are designated "local". For these classes teacher training is standardized and comparison classes established. These local classes provide much of the evaluation data derived from the pilot study including data related to classroom observations, student and teacher interviews and individualized testing. Classes not in the St. Louis area are designated "outer ring". These classes provide information concerning usage of materials (via questionnaires and teacher logs) and various corroborative test data from cooperating sites.

This report describes the interviews conducted with the 18 local second grade teachers at the end of the school year. These were teachers of classes which began using CSMP materials in first grade the previous year. Hence the students had completed two years of the CSMP program.

### Construction and Administration of the Interview

The purpose of the interviews was to probe teacher opinion concerning the second grade CSMP program in a somewhat informal, open-ended manner. It was felt that through this personalized approach information might be gained that would not have been gotten in the more formal questionnaires and logs which are given to all the teachers using CSMP.

The interview was based on a set of questions designed to elicit a range of teacher opinions about the program including general impressions, program comparisons, best and worst aspects, time in class, lesson sequence, management of materials, student attitudes, new students, slow students, teacher preparation, parent reactions, first and second grade comparisons, and other comments. In some of the questions the teachers were asked to compare CSMP to other programs in terms of certain aspects. In other questions they were asked to make non-comparative qualitative judgements about CSMP. The questions used are given below.

#### 1. General Impressions

- a. "Now that you've taught the CSMP program for nearly a year (two years), what is your general impression of it?"
- b. "In what ways (if any) did you find your perceptions of the program changing over the course of the year (two years)?"\*

#### 2. Program Comparisons

- a. "How does CSMP compare with other second grade math programs?"
- b. "What do you think are the main differences between this program and others?"

#### 3. Best and Worst Aspects

- a. "What do you think are the best aspects of CSMP?"
- b. "What are the worst aspects?"

#### 4. Time in Class

- a. "About how long is math class every day?"
- b. "How does this compare with class time usually spent in teaching math?"
- c. "Were the suggested times in the manual reasonable?"

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\*Only three teachers who taught CSMP to first grade classes in 1973-74 and taught CSMP to second grade classes in 1974-75 were asked these questions.

## 5. Lesson Sequence

- a. "Did you repeat certain lessons?"
- b. "Did you use supplementary materials?"
- c. "Did you change the order of lessons?"

## 6. Management of Materials

- a. "Did you find it was a problem to keep track of program materials (workbooks, worksheets, manipulatives)?"
- b. "How did you assign workbooks to students. Did you keep track of their scores?"
- c. "Was there enough information from workbooks, worksheets, class activities to help you decide when a student needed individual help? If not, how did you decide who needed extra help?"
- d. "Do you think there is a need for testing materials (for the teacher to evaluate the students) to be incorporated into the program?"

## 7. Student Attitudes

- a. "How well do you think your students liked CSMP as compared with other math programs?"
- b. "Which types of students like this program better? What appeals to these students?"
- c. "Which types of students don't like the program. What doesn't appeal to them?"
- d. "What are students' reactions to the Minicomputer now?"
- e. "Can the students use the Minicomputer fairly well?"
- f. "What do you think of the Minicomputer?"

## 8. New Students

- a. "What special things did you do for students who entered the program at the beginning of the second grade (who hadn't had it in the first grade)?"  
  
"How well did it work?"
- b. "What special things did you do for students who entered the program later in the year?"
- c. "Should more attention be paid to the problem of new students in the teacher's guide?"

9. Slow Students

- a. "What type of special help did you give to slower students?"
- b. "Do you think that this program is as appropriate for slower students as other programs?"
- c. "How appropriate is the spiral approach for slow students?"

10. Teacher Training

- a. "Do you think the orientation and training you received was satisfactory for you?"
- b. "What is the minimum preparation a second grade teacher would need to successfully teach CSMP?"

11. Parent Reactions

- a. "How extensive has parent reaction been?"
- b. "Have there been any 'presentations' about the math program for parent and/or community groups?"

12. First and Second Grade Comparisons\*

- a. "How does the second grade program compare with the first grade program?"
- b. "Have you found that some of the students who couldn't get elementary concepts in the first grade are finally getting them in the second grade?"

13. Other Comments

- a. "Do you have any other comments you would like to make about the program?"

Usually the interviews took place while the students were involved in part of the end-of-year testing program. The interviews took from 20-30 minutes to administer and were usually conducted in private with only the interviewer and the teacher present. One interviewer conducted all the interviews. All the interviews were tape recorded. Transcripts of the recordings are included in the Appendix of this report.

In order to encourage informality and to follow up teacher responses, the interviewer did not always use the exact wording or sequence of questions. Occasionally questions were omitted if the teacher had already attended to the question in a previous response and occasionally additional probes were used to follow up a particular teacher comment. In the following section the responses to all the questions are summarized across teachers.

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\*Only three teachers who taught CSMP to first grade classes in 1973-74 and taught CSMP to second grade classes in 1974-75 were asked these questions.

### Summary of the Interview

Using the transcripts of 18 second grade teacher interviews an attempt was made to summarize the responses across teachers. Because of the open-endedness of the questions and the extent of the responses this proved to be a somewhat difficult task.

Generally, the response to the interviews indicated the teachers have a very favorable attitude toward CSMP and the children have reacted to the lessons and activities in a very favorable manner.

In the sections that follow, the responses to the 18 sets of questions are summarized across only 17 teachers. One teacher taught only a portion of the CSMP program, and then only until Christmas, apparently due to the failure of all the materials to arrive. She also attended only one day of the week long training session and had a class composed more than half of students without CSMP background. For these reasons she is not included in the summary, though her responses are given in full in the Appendix (Interview #6). It will merely be noted here that her responses were in the main negative towards CSMP.

The reader is urged to read at least some of the individual transcripts in the Appendix as well as the summary. The author feels that the summary, though useful in providing an overall perspective, cannot adequately convey the numerous shades of opinion expressed in response to almost every question. Only by reading an interview all the way through can one get the overall impact of each teacher's responses.

### General Impressions

"Now that you have taught CSMP for nearly a year (two years) what is your general impression of it?"

"In what ways did you find your perceptions of the program changing over the course of the year (two years)?"

The first pair of questions was asked to get an indication of the teachers' general impression of the program after being involved with it and how these impressions had changed during the year.

The teachers attended to a wide range of attributes in expressing their general impression of the program. The comments made referred to students' attitude and achievement, appropriateness of content, enjoyment experienced teaching the program and the general overall quality of the program. All of the comments were favorable although about half (8) of the teachers expressed some concern about the appropriateness of some of the material for the lower ability students.

An edited version of each of the teacher's general impressions follows. The reader may refer to the interview transcript in the Appendix of this report to see the full text of the response or to check the accuracy of the edited version. The number in parenthesis following the response corresponds to the number of the interview in the Appendix.

I like it because it's broader. I find that since they (the students) don't have as much to read themselves they seem to grasp a lot of things they wouldn't. (#1)

I like it. I think it's interesting. I think it's challenging to the children. I do think they enjoy it. (#2)

I think it's a very good program but I have one objection, it doesn't do anything to help the slower student. (#3)

I think it's a good program and I think the smarter pupils really benefit from it. The slow ones I'm not too sure. They catch on rather slowly but when they have it, they have it. (#4)

I like it. I enjoy teaching it. I think the kids enjoy it. They enjoy the various activities. (#5)

I think it's very good and I think average and above average children have enjoyed it and have gotten much from it. I feel the children at the lower end are confused at times and aren't picking up the things we are doing. I don't know if those children would be confused with another program or not. (#7)

I like it but it doesn't meet the needs of the slow student. There wasn't enough repetition or work on basic number facts and they were frustrated by the pace. (#8)

It's a marvelous program for average and above average children. I don't think it's for every child. (#9)

I really like it. Every lesson has a part that even the children that fail in math can do. They learn so much more. I don't get bored myself. We don't repeat the lessons until they learn it, we can go back and get it later. (#15)

It has an advantage for the brighter students because it challenges them more. It has different teaching methods in beginning math that I like. (#14)

I really liked it. I liked the variety and presentations. But with slower students, I didn't like the frequency with which things jumped around. (#10)

For the most part I've been very happy with it. The children have a good understanding of the facts and possibly a better understanding of what they are doing. (#11)

I like it. I think it's good. I think it has its drawbacks, but the brighter ones get a lot more and I don't think it hurts the low students. I enjoyed teaching the first grade program more than the second grade. (#12)

I generally like it but I'm not sure how well it works with low ability kids because I only had one student in that category. I think it's a very good program for the average and above average student. (#13) 15

I like it very much. The children are just so far advanced and so enthused that there's no way I could give it up and go back to the old book. (#16)

I had an average group and I feel that it has helped them. They could grasp the concepts and go much further with it than in past years. (#17)

I think it's good. I think the children enjoy it. I teach the slow group and they grasp it much quicker. (#18)

When asked how their perceptions of the program changed during the year seven teachers (#5, #8, #12, #13, #15, #17, #18) indicated their perceptions did not change much. Eight teachers (#1, #3, #4, #7, #9, #10, #11, #16) indicated some change of their perceptions of the program and two teachers' responses did not attend to what was asked in the question.

In seven of the eight cases where the teachers indicated their perceptions had changed, the changes were in a positive direction. Three teachers (#1, #4, #16) said at the beginning of the year they thought there was too much material or that the material would be too difficult for the students but found that they were mistaken.

Two of the teachers (#7, #10) indicated they've gained a much better overall view of the program having taught it once. One teacher (#3), who had lost some of her enthusiasm for the program when an influx of new students arrived at midyear, regained all of her enthusiasm upon seeing the students' results at the end of the year. Two teachers (#10, #11) became more comfortable working with the spiral approach. The only slightly negative change in perception of the program occurred in a teacher (#9) who had taught CSMP in the first grade last year and was now teaching CSMP in the second grade. She did not feel the second grade program measured up to the first grade program in meeting the needs of all the ability levels of the students.

An edited version of each of the responses indicating how their perceptions of the program changed during the school year are given below. A "C" before the response indicates a change took place and an "NC" indicates no change. As will be the case throughout this report the number in parentheses following each summary corresponds to the interview number. No summaries are given for the three teachers who gave responses which did not attend to the question.

- C At first I thought some of the lessons would be difficult for me to get across to the children and I was surprised that I could get somebody in the class to respond. In some instances everyone wants to do it. (#1)
- C Yes. At first I was really gung-ho about it because my students seemed to be doing really well and then about January, I don't know if it was because I got an overflow of new students or what, it just seemed like I got bogged down. I just felt like sometimes I was being pressured to get through this. But right now seeing results with it and seeing the kids come along, I like it. It's a good program. (#3)



- C I was skeptical at first. It seemed to be a lot of fluff. I thought it was trying to cram too much into youngsters of this age. But I've gotten the idea that it has been good, it has given them a wider view, more tools to work with and I'm not quite so skeptical now. (#4)
- NC I don't know that my impressions of the program have changed all that much. (#5)
- C Now I see it as a whole rather than step by step. It should make it much better for me next year. (#7)
- NC No. No changes. (#8)
- C It hasn't that much. I thought the first grade program was for every child and this year I don't feel that it is. (#9)
- NC I'm still just as enthused about it as I was at the beginning. (#10)
- NC Not really. I didn't have preconceived things until I got into it. (#12)
- NC I generally liked it from the beginning. It's about the same. (#13)
- C Coming into the program late I was confused but otherwise I just really liked it the more I got into it. (#10)
- C I was somewhat confused with the sequencing. At the beginning of the year I found too much board work and not enough actual doing it. Now at the end of the year I feel different. There is a lot more reinforcement. (#11)
- C At the workshop I kept saying the children can't do that hard work. I was just completely amazed at the reasoning ability of some of these second grade students. (#16)
- NC No I was quite enthusiastic about it at the beginning and still am now. (#17)
- C I think I was enthusiastic about it in the beginning. I felt the students weren't making any progress but this year I feel they have made progress. (#18)

The opening questions asked the teachers to give their general impressions of the program after teaching it for a year and how their perceptions had changed during the school year. All the teachers were favorably impressed with the overall program and a number of specific aspects of it but a number of teachers expressed some concern about the program meeting the needs of the slower students.

The impressions of seven of the teachers became more favorable after teaching the program for a year. Only one teacher, based on her first grade experience, was slightly disappointed in the second grade program.

### Program Comparisons

"How does CSMP compare with other second grade math programs?"

"What do you think are the main differences between this program and others?"

These questions were intended to get an overall judgement of the program vis-a-vis other math programs taught by the teacher and to find out what the teacher perceived to be the distinctive features of CSMP.

Two teachers (#2, #10) who were teaching second grade for the first time could not respond to these questions and are excluded from the following summary.

Generally the teachers responded with a wide variety of specific aspects of CSMP in comparing it with other programs. Four teachers (#3, #11, #14, #18) did make overall qualitative comparisons of CSMP and other programs with all of these comparisons being very favorable towards CSMP. A summary of these responses are given below.

"It's much better." (#3, #14)

"Very comparable." (#11)

"CSMP is far superior." (#18)

The rest of the comments comparing CSMP and other math programs centered around either the students reactions to the program or the content and materials included in the program. Seven of the teachers (#5, #7, #8, #12, #13, #15, #18) felt the students were more enthused and had a greater understanding of mathematical concepts than they've had in other math programs. Seven of the teachers (#1, #4, #5, #9, #12, #13, #17) felt CSMP is a richer program which is more advanced and offers the students a variety of experiences in mathematics.

All of the comparisons, with only one exception, were very favorable towards CSMP. The only negative comment towards CSMP was made by a teacher (#7) who felt the students were ahead in their understanding of various concepts but were behind in subtraction.

Two distinctive features of the program were perceived by the teachers. First, the teachers felt the students were more enthused and had a better understanding of certain mathematical concepts because the students were exposed to and involved in many mathematical experiences. Fourteen statements concerning student reactions were made by 10 teachers. All of these statements which are summarized below, were very favorable towards CSMP.

"It gets the children more involved." (#1, #15)

"The children get a chance to get into it more with all the manipulatives." (#3, #14)

"CSMP makes the children think." (#3)

"It's more fun for the kids." (#5)

"The children were further ahead in understanding the concepts." (#7)

"CSMP is a lot more exciting for the average and above average student." (#8)

"The children are able to experience a lot more in math." (#8)

"CSMP is a lot more interesting for the children." (#13, #12, #18)

"The children enjoy the workbooks." (#13)

"The children are not turned off by the drill." (#18)

The second distinctive feature of CSMP as perceived by the teachers was the content. The teachers felt CSMP is a much richer program than others. They felt the materials and the spiral approach allowed the students to be exposed to more mathematical concepts at a much more advanced level. Twenty-three statements concerning the content and materials of CSMP were made by 15 teachers. In addition one teacher commented that CSMP was more fun for her to teach while another teacher said she didn't have any discipline problems with the children. With the exception of three of the responses, all of the comments concerning the content differences were positive toward CSMP. A summary of all the responses concerning these differences are given below. An "N" preceding the statement in the summary indicates that statement was judged to be negative towards CSMP.

"I like the manipulatives in this program." (#9, #16)

"CSMP is broader in scope." (#1, #5)

"It's more fun for me to teach." (#5)

"The workbooks helped me to individualize." (#14, #15)

"It has a wider range of subject matter." (#3, #4, #12, #14)

"CSMP is more of a spiral approach." (#8, #9)

"The lesson plans helped me teach the lessons more thoroughly than I would have." (#14)

N "CSMP lacks time telling and roman numerals." (#15)

"It's the approach you take." (#11)

"It's much more advanced." (#17)

"It teaches more." (#18)

N "I'd like a time and measurement unit to be included." (#12)

"CSMP has more group participation." (#12)

"Multiplying and fractions come much earlier." (#7)

N "Subtraction (with borrowing) doesn't come until the end of the year." (#7)

"I liked all the different activities." (#13)

"There's no discipline problem." (#16)

"I like the MC." (#16)

Three conclusions can be drawn from the responses of the teachers on program comparisons and differences. The teachers felt the overall CSMP program and many specific aspects of the program were superior to other programs with which they had been involved. One of the features of the program on which many teachers commented, was the students' reaction to the program in terms of attitude and learning. Finally, in regard to content, the teachers feel CSMP is more extensive than other programs.



The above tabulation shows the teachers viewed aspects involving content, materials, pedagogy, or student reactions as being particularly good parts of the program. The worst aspects mentioned involved content, materials and pedagogy. Altogether, 29 statements concerning the best aspects of the program were made by the teachers. The Minicomputer and the variety of higher level concepts were mentioned most often by the teachers as being the best aspect of the program. The most serious thing seen as a worst aspect was that six teachers felt parts of the program caused difficulties for the slower students.

Overall the responses to these questions tended to reinforce the responses to previous questions. A strong, favorable reaction towards the program is seen in an overwhelming majority of responses. Two teachers would not mention any bad aspects of the program; while several others qualified their remarks, by saying it would improve the next time or other programs were just as bad. Overall the best aspects far outweighed the worst aspects of the program. The most serious worst aspect was the difficulties encountered by the slower students.

### Time in Class

"About how long is your math class every day?"

"How does this compare with class time usually spent in teaching math?"

"Were the suggested times in the manual reasonable?"

These questions were asked to get a comparison of the time required to teach CSMP and other math programs and to find out if the time suggested for each lesson in the teacher's guide was reasonable.

The class time used in teaching math ranged from 35 minutes (teacher #15) to 60 minutes (teachers #2, #4, #5, #10, #11, #13) with the average amount of time being approximately 55 minutes. Only three teachers (#2, #3, #4) indicated they were spending more time teaching CSMP than they normally would using another math program. Overall, the teachers felt the times suggested for the lessons in the teacher's guide were very reasonable. Two teachers (#12, #15) indicated not enough time was allotted for the students to work in their workbooks and one teacher (#5) indicated the introductory lessons usually took 5 to 10 minutes longer than the suggested times.

A summary of all the responses concerning the suggested times in the teacher's manual, amount of class time devoted to math and comparison time required by CSMP with other programs is given in the chart below.

Teacher	Length of Math Class (in minutes)	Comparison of CSMP with Other Programs	Were Suggested Times Reasonable
1	45	Didn't respond to question	Yes
2	60+3 workbook sessions	Comparable	Yes
3	55	More	Yes
4	60+3 workbook sessions	More	Yes
5	60	More time required at beginning but same now	Yes, except introductory lessons took 5-10 min. longer
7	40	Same	Yes
8	50	Same	Yes
9	40-50	Same	Yes
10	60	Same	Yes
11	60	Same	Yes
12	50	Same	Yes, except workbook sessions were too short.
13	60	Same	Yes
14	45	Same	Yes
15	35	Same	Yes, except workbook sessions were too short
16	45	Same	Yes
17	45	Same	Yes
18	35	Same	Yes



Lesson Sequence

"Did you repeat certain lessons?"

"Did you change the order of the lessons?"

"Did you use supplementary materials?"

These questions were asked to determine to what extent the teachers needed to change and supplement the program to meet the needs of their students.

The responses to these questions indicated the teachers did make some minor changes in the program as they taught it. Nine teachers (#1, #3, #5, #7, #8, #9, #11, #16, #17) said they did repeat lessons whenever they felt the majority of the students were having difficulty and three other teachers (#4, #10, #13) indicated they would review certain aspects of a previous lesson but not the entire lesson. Although the number of lessons repeated by each teacher was usually small (5 or 6), the lessons that were repeated usually dealt with the Minicomputer or arrow diagrams.

A summary of the responses concerning repeated lessons is given below.

If I thought the group really needed it, I repeated some of the arrow diagram lessons. (#1)

I didn't repeat any. (#2, #12, #14, #15, #18)

Yes. Minicomputer, arrow diagram, and number line lessons, basically for the kids who had a very poor math background so they could begin to pick up. (#3)

I didn't repeat as such, but when we came back to a topic I worked harder on the weaknesses they showed the last time. (#4)

There were only a few. One was on making backwards plays to find one-half of a number. (#5)

Some lessons with multiplying and the inverse operations with the entire class. (#7)

Maybe 3 or 4 throughout the year. (#8)

About 5 or 6 throughout the year, usually because the children weren't tuned in and just weren't getting it. (#9)

I did some repeating with the Minicomputer whenever we would come back from a break. (#13)

In the form of a review but not actually the entire lesson. (#10)

Not many, the lesson I had to repeat more than anything else was the special forward play on the Minicomputer. (#11)

I repeated only a couple. (#16)

There were some. (#17)

The second question asked if the teachers had changed the order of the lessons. Although there wasn't any major modification in the lesson sequence the teachers did not hesitate to reorder and select lessons which they felt met their students' needs. Five teachers (#2, #5, #8, #15, #16) indicated they had reordered the lesson sequence to accommodate their teaching schedule. Toward the end of the year, three teachers (#3, #7, #12) had started to teach only the lessons they felt would be most beneficial for their students.

A summary of all the responses concerned with changing the lesson sequence is given below.

I changed some. I might have even just skipped over the game playing. (#1)

Once in a while, I might teach a more difficult lesson in the morning and a simple, short, 15 minute one in the afternoon. (#2)

In the last month of school I started to pick out lessons that would be of more use to the students. (#3)

No. I **followed** the lesson sequence. (#4, #9, #10, #14, #18)

Yes, at the end. If a lesson was too long I'd skip it and go on to a shorter one. (#5)

At the end in order to teach subtraction, I skipped all the lessons in between. (#7)

If I needed more time or something, I might choose a lesson a few days ahead that would fit into the time slot. (#8)

Just because of time elements, I changed some of them around. (#10)

Just at the end, we didn't go into the decimal point. (#12)

At the beginning of the year quite a lot when we didn't have the materials, I would just pick and choose lessons I could use. (#13)

Toward the end I have. (#11)

When I was ill, I had the substitute give a lesson I thought she was more capable of handling. (#16)

Not very much. (#17)

In addition to the changes listed above, the teachers supplemented the program with a variety of commercial and teacher-made materials. These supplementary materials are listed below.

Commercial workbooks (#1, #17)  
Flash cards (#2, #3, #14)  
Time telling unit (#2, #11, #15)  
Addition, subtraction, and multiplication tests (#12)  
Commercial worksheets (#3, #5, #9, #13)  
Felt shapes (#3)  
Math games (#4, #7, #13, #14)  
Old math books (#4)  
Teacher-made materials for place value (#7)  
Teacher-made worksheets (#8, #9, #12, #14)  
Counters (#8)  
Television programs (#9)  
Roman numeral unit (#15)  
Teacher-made transparency (#17)

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The materials used to supplement the program ranged over worksheets, books, flash cards, games and time telling units. Seven teachers (#3, #5, #8, #9, #12, #13, #14) used either commercial or teacher-made supplementary worksheets. For the most part, the worksheets consisted of basic addition and subtraction facts which the teachers felt were not adequately covered in the program. Other than the worksheets the remaining supplemental materials consisted of a variety of materials which the teacher had on hand from previous years. Again the use of supplementary materials indicates the teachers felt free to incorporate their own ideas and materials into the program.

In summary, the teachers made relatively minor modifications in the program. Only a few lessons were repeated when the teacher felt it would benefit the entire class. Changes in the lesson sequence occurred mostly to make the best use of available time and student interest. The major emphasis of the supplemental materials was on basic addition and subtraction facts. The other changes in the lesson sequence and supplemental materials tended to reflect the individual teacher's preferences. Overall the teachers generally felt free to use their ideas and materials whenever they felt it would be most beneficial for their students.

### Management of Materials

"Did you find it was a problem to keep track of program materials (workbooks, worksheets, manipulatives)?"

"How did you assign workbooks to students? Did you keep track of their scores?"

"Was there enough information from workbooks, worksheets, and class activities to help you decide when a student needed individual help?"

"Do you think there is a need for testing materials (for the teacher to evaluate the students) to be incorporated into the program?"

These questions were asked to discover what problems, if any, the teachers experienced in organizing and using the program materials to help and evaluate their students.

All but three of the teachers indicated management of materials did not pose any particular problems. A variety of physical means were used to store the materials among those most frequently used were file cabinets, file drawers, and boxes. Of the three teachers who indicated they experienced some problems with the materials, one teacher (#2) said the method she had used last year was better and would use that method next year. Another teacher (#5) indicated problems arose sharing materials with the first grade teachers till all of the materials arrived. The third teacher (#8) said the materials required a lot of room for storage and added that because her cabinet did not have a door, some of the materials disappeared.

The responses to the question concerning the assignment of workbooks to the students indicated all of the teachers followed the suggestions in the teacher's guide. With minor variations, the students that were having difficulty were assigned the first workbook in a series and the rest of the class was assigned the third or fourth workbook in the series. When the students finished the workbook they were given the next one in the series. Several teachers commented that at the beginning of the year, the assignment of the workbooks was purely a subjective decision but later in the year could easily assign the workbooks based on student progress.

A summary of the responses regarding the assignment of the workbooks to the students is given below.

I gave them out according to their ability - average students got book 4, the top got maybe 1 ahead and the slower students got book 1. (#2, #4)

I would give the slowest students the R1 and those that were a little better the R2's and the top students got the A4 workbooks to start in. (#3)

Followed the suggestions of giving the average workbooks to the students who were doing O.K. (#5)

The slower students started on the R books and the rest of the class started on the average books. (#1, #6, #15)

For the most part it was just my opinion. I would see how they progressed in the workbooks and picked up from there. (#7)

To start out with I guessed and I went from there seeing what they were doing. (#8)

Used classroom observations, daily worksheets and the Stanford math scores to decide at the beginning, whether the children should start in the R1 or R3 books. (#14)

Started out by using the achievement test scores. Anyone who was below grade level received the R1 and the rest started on the R3 books. (#12)

Generally from the way the first grade teacher suggested last year. She suggested I give the kids certain books. (#13)

At first I started everyone on the first workbook. Then depending on how many workbooks they finished I'd start them on the second or third book. (#10)

I started the slower students on the second book and the rest of the class started out with a 3 or 4. (#11)

Since I have the high group, I started them in the first average book and if they were having difficulty I gave them an R3 book. (#11)

Having the average group I started them out in the remedial workbooks. If they had difficulty I'd move them back and if they finished quickly I'd move them into the next one. (#17)

Having a slow group I started everyone in the remedial workbook. (#18)

There was a variety of procedures used by the teachers in grading or checking the workbooks. Overall the teachers checked the workbooks in a manner which was consistent with their individual preferences. Some teachers checked the entire workbook and recorded the students' progress; others would check certain pages and discuss any mistakes with the student. Some teachers required every mistake to be corrected before the student could continue with another workbook while others would allow a predetermined number of errors.

A summary list of responses on grading the workbooks follows.

No I didn't keep a record because I could see which ones seemingly were doing something with it. (#1)

I put a check if they got all of them correct, if they didn't I put a question mark meaning, "Go back, I have a question about what you did." (#2)

I checked the entire workbook. (#3)

We would discuss what wasn't right and then I'd send them home so the parents could see what was going on. (#4)

I'd check what they were doing and I'd have a general idea. I know who's doing what and where they belong. (#5)

I scored them and every mistake had to be corrected. (#7)

If they really bombed out on one I'd mark that but for the most part they worked successfully through the workbook. (#8)

I checked them and took an overall score from the whole thing. If they did a darn good job I gave them a plus, average was a check. (#9)

If they missed more than what I thought was necessary I just had them do that page over. (#15)

We kept track of how many they completed at each level. (#12, #14)

I didn't keep them in a grade book or anything like that. (#13)

They had to get a workbook 100% right. (#10)

I kept track of the scores on just the specifically marked pages. (#11)

I gave one mistake an A, 2 a B, 3 a C, 4 a D, and 5 an E. Consistently all of them were A's and B's. If they made anything below a B, I made them go back and do it again. (#16)

I would check them closely and ask the student to repeat the work in the workbook that they did incorrectly. (#17)

To a certain extent. I knew they progressed and you can tell. (#18)

All of the teachers felt there was enough information from the program materials to determine which students needed individual help. Two teachers (#1, #2) added that they did not have as much time as they would have liked to work with the students that needed the individual help. One teacher (#12) did not feel her record keeping system was as good with CSMP as with other programs. She felt she knew the high and low ability students but not the average students.

The teachers were divided on the need for testing materials to be incorporated into the program. Seven teachers (#2, #3, #7, #8, #9, #10, #15) did not feel there was a need for additional testing material as the workbooks were considered good evaluators of student progress. Eight teachers (#4, #5, #11, #12, #14, #16, #17, #18) felt testing materials would help them in evaluating student progress and also teacher performance. Also one teacher (#1) said if there was no actual testing materials, she would like some suggestions as to what topics should be emphasized. Another teacher (#13) said testing materials might be necessary in a large class but in a small class none would be necessary.

A summary list of responses concerning the need for additional testing materials to be incorporated into the program follows.

There could be. If there was no actual testing material then some suggested emphasis on topics would be helpful. (#1)

I don't think so. I just made up my own. (#2)

No I don't think so because you get an idea of how your students are doing from the workbooks and worksheets. (#3)

I think it would help. You'd get some ideas as to how the youngsters were doing in regard to the whole set up. (#4)

Yes. It would help even though a lot of the pages in the workbooks are tests themselves. (#5)

I don't know. I think the workbook is a pretty good evaluation. (#7)

I think primarily the workbooks are testing. (#8)

They could but it's not really necessary. Isn't that the purpose of the workbooks? (#9)

The workbooks are excellent. I don't feel there should be any other tests. (#15)

Yes I do. I had a lot of trouble evaluating each student. I don't know if it was because of having a big class or what. (#14)

Just for us mainly - every 20 or 30 lessons just a worksheet. (#12)

Maybe for a larger class. (#13)

I don't think so. I used the workbooks as a test because they covered everything that had been taught. (#10)

I would like it myself. I guess if I just had something to reassure myself along the way. (#11)

I would like a little more guidelines in grading since our school system still requires some type of grade. Before I tried to schedule a test a week over the type of material we had gone over during the past week. (#16)



Yes. I felt they all succeeded and some were stronger than others. But it was very individualized so I don't like to put a grade on something like that. (#17)

Yes I think that's one of the shortcomings. I think it would help if you had a chart or something where you put all of their names and then maybe just certain test scores. (#18)

In summary it can be said that the management of the materials did not pose any particularly serious problems for the teachers. Although the teachers varied considerably in the methods of grading and checking the student workbooks, most of the teachers followed the program suggestions in assigning the workbooks to the students. The workbooks, worksheets, and class activities provided the teachers with ample information to decide which students needed individual help, although not all the teachers felt there was enough time to help these students. About half of the teachers indicated that there was a need for student testing materials or suggestions for topic emphasis.

### Student Attitudes

"How well do you think your students liked CSMP compared with other math programs."

"Which types of students like this program better? What appeals to these students?"

"Which types of students don't like the program. What doesn't appeal to them?"

"What are the students' reactions to the Minicomputer now? Can the students use the Minicomputer fairly well? What do you think of the Minicomputer?"

These questions were intended to get the teachers' judgements of their students' attitudes towards the overall program and specific aspects of the program. Also is was intended to find out what type of student likes or dislikes the program the most and the reasons for these feelings.

All of the teachers indicated they felt their students liked CSMP better than other math programs. Three teachers (#8, #9, #12) qualified their statements by saying the average and above average student showed more enthusiasm for CSMP than other programs. One teacher (#8) added she felt the slower students might feel more comfortable in another program.

The responses to the question "What type of student likes CSMP better?" ranged from the slower student to all students although the most frequent response was the average and above average student liked the program the most. Eight teachers (#3, #4, #5, #7, #8, #9, #12, #13) felt the average and above average students liked CSMP the most, and one teacher (#11) felt the slower students liked the program more. Six teachers (#2, #10, #14, #15, #16, #18) didn't feel there was one group of students who liked the program more than another group.

Two of these teachers had rather homogeneous classes and thus their responses were based on a high ability class (#16) and a low ability class (#18). One teacher (#1) said the students who liked math in general, liked the program better while another teacher (#17) having taught only the average students felt she could not answer the question.

A summary of the responses to what type of student likes the program better and the aspects of the program that appeal to them follow.

I've found that some of my children who said that they really like math would just be working eagerly with the materials, the Minicomputer and the worksheets where they don't have to do much writing. (#1)

The bright student will get the most out of it but I think every child would like it. It meets the needs of most kids. It meets the needs of kids who don't verbalize well because they can draw pictures and they can express themselves with arrows; they can use their Minicomputer. (#2)

The average and above average. The below average like it because of the colors. The average and above average get a chance to manipulate things. I think it's because it gives them a chance to work the brain and the hands too. (#3)

The brighter students. We had games, probability, road building, and subtraction. (#4)

The average and above average learner. The games that are used and the challenge of some of the more difficult problems. (#5)

The average and above average thoroughly enjoy it. What it is that really appeals to them is something I'd like to know. (#7)

The average and high average students. They have really met success and are excited about learning new skills. (#8)

The average and above average. They like the manipulatives, working with negative numbers, and the workbooks. (#9)

I don't think there's one group. I think there is something different in the program for everybody and they all equally show it. The advanced students feel challenged, the average students have a chance to shine when they have their turn to come up to the board and the slower ones feel success too. (#15)

I think all of them. They liked the arrow diagrams, the colors, the stories, the Minicomputer, the whole thing in general. (#14)

The average and above average. They are doing more. (#12)

The brighter students seem to enjoy it the most. They are challenged by the problems and the things in it. (#13)

I don't think there are any that liked it better. They all groan when we don't have math. They really enjoy it. (#10)

I imagine the ones that are slower in math. All the manipulative things there are to work with. (#11)

There are some children who would rather be at home fishing or something but as far as math I think they liked it better than they would have just doing the routine work. (#16)

I just had the average students so I couldn't answer that question. (#17)

I really don't know. I think they all liked it really. They liked the Minicomputer and working with larger numbers. (#18)

These responses show a variety of aspects of the program which the teachers felt appealed to the students who are the most enthused about CSMP. The aspects that stand out of all the responses is that the advanced content and richness of CSMP challenges the students. Other aspects which appealed to these students were the manipulatives, games, stories, and diagrams.

Seven teachers (#2, #7, #12, #10, #16, #17, #18) did not feel there was any type of student who did not like CSMP. Five teachers #1, #3, #4, #8, #9) felt the slower students might not like CSMP as much because they could not grasp all of the concepts as fast as the rest of the class. Two of these teachers (#1, #3) qualified their statements by saying they didn't want to imply that the students didn't like the program but that the slower students might not like it as much. One teacher (#15) indicated the students with a short attention span might not like the program as much because many of the activities were teacher directed. Another teacher (#15) said a new student did not like the program at all and didn't want to learn how to use the Minicomputer. Two other teachers (#5, #15) weren't sure if the students they were thinking of really disliked the program and the interviewer neglected to ask one teacher (#14) this question.

A summary of the responses to what type of student dislikes the program and the aspects which don't appeal to them appear below.

The slower children who really don't have enough confidence in themselves that they can really do anything but I didn't ever hear anybody say "ugh" when we got ready to do anything. (#1)

The slower ones. I'm not going to say they don't like it. What it is, is that some of the things that they can't do and that will turn you off. (#3)

Those who can't get it. They feel left out and behind. They had trouble naming the dots on the line with magic numbers and the Minicomputer until they got used to it. (#4)

I can think of one person who's had a hard time but that may not necessarily mean that she doesn't like it. She still may like it better than the other program. She has had problems finding fractional parts of numbers on the Minicomputer. (#5)

I don't think there's any type that doesn't like it. There's certainly good attention in math class. (#7)

The slower students. The pace is hard to keep up and they don't feel success. (#8)

The slower students are not crazy about it. They see what the other kids are doing with it and they just can't grasp it that fast. If they can't get it then they don't try. (#9)

I have 2 or 3 that have a very short attention span and it's very difficult for them to get involved. There's a lot of things that are teacher directed and it's hard for them to listen. (15)

I really don't think we've had any that don't like it. The ones with an attention problem probably miss a lot. When I'm standing in front giving a lesson I don't have control over a poor listener. (#12)

I can only think of a couple of kids that seem like they dislike math, one is average and the other is low. I don't know, they just might be saying things because they always have a comment about everything you do. (#13)

There are students who don't like school and don't like work but I don't think it would just be the program that they don't like. (#10)

A new student did not like it at all. She didn't want to learn to use the Minicomputer. (#11)

I don't believe there were any that disliked it. (#2, #16, #17)

I think they all liked it. (#18)

The next three questions dealt specifically with the students' and teachers' reactions towards the Minicomputer.

Only one teacher (#1) indicated the students were still as enthused about the Minicomputer at the end of the year as they were at the beginning. The rest of the teachers felt the students, given a choice would not use the Minicomputer to solve problems or do calculations. The general feeling is that the students have advanced far enough in their understanding of the addition algorithm so that getting the Minicomputer and worrying about the mechanics of it are chores with which they'd rather not bother.

A summary of the teachers' comments concerning the students' reactions toward the Minicomputer at the end of the year is given below.

If they see a lesson and it says use your Minicomputer, you'll see them get down on the floor and they're just as busy as little beavers. (#1)

They don't like to work with it, especially the bright ones. They don't want to be bothered getting it out. But they like it and they use it if you tell them they have to. (#2)

They like it but they don't feel like they have to use it any more. They'll use it if you tell them they have to. (#3)

They advanced so fast that whenever I gave them examples where they could use the Minicomputer, they would rather work without it. (#4)

Most of them try not to use it. In fact they will get it out by themselves, if they absolutely cannot work out a problem but most of them would rather sit down and figure it out. (#5)

Many of the students haven't been using it; they don't really need it. The students that need it aren't sure how to go about the operations. (#7)

They didn't use it much. They didn't seem to be interested in it. They felt burdened by it and it wasn't fun any more. (#8)

They don't want to be bothered with it. They'd rather try to do it without. (#9)

Most of them don't use it. They don't want to use it. There are some who need to use it but they don't want the others to know they have to. (#15)

We have not stressed it in the fourth quarter. They realize it was a method to help them calculate. (#14)

The good ones haven't wanted to bother with it and for the low ones, it's just beyond them. (#12)

Only if I tell them. They want to get it done and not worry about the mechanics of doing the Minicomputer. (#13)

They think it's neat if they can work a problem and don't have to use the Minicomputer. (#10)

They don't want to use it. They'll guess before they'll use it. They have the feeling they're too big for that. (#11)

They like it if they need it but they know when they need it and I've never required them to use it. (#16)

They've begun to pull away from it and they don't use it as much. (#17)

They don't really use them as much because they can go ahead even the slow ones. (#18)

In response to the question "Can the students use the Minicomputer fairly well?", all but two of the teachers (#9, #12) indicated that most of the students could do various things on the Minicomputer. Only one teacher (#16) indicated that all of her students could use the Minicomputer proficiently; the rest of the teachers indicated a few of the slower students or students who began the program toward the end of the school year still had problems with it. Two teachers (#9, #12) did not feel the majority of students in their classes could work independently with the Minicomputer.

When asked their opinions of the Minicomputer all of the teachers indicated they liked it. Two of the teachers (#5, #12) added they felt the lessons involving the Minicomputer should be changed to make them less tedious and more interesting.

Another teacher (#14) added that she felt it was undesirable to have the newer students master it. A summary of all the teachers' reactions towards the Minicomputer is given below.

I like it. I would like to have a group that had it in the first grade. (#1)

I like it. I think it's a great device. I think it's fantastic. When I showed those kids how to figure out the point board that was really neat. That just blew their minds. It blew my mind too when I first found that out. (#2)

I like it. I think it's good. At first I thought they wouldn't be able to be weaned from it but now I know they can. (#3)

I thought it was quite good. It gave a pictorial view of the place value. (#4)

I like it. Sometimes it's kind of tedious. Maybe it should be in more, shorter lessons. (#5)

I like it. I couldn't believe it when I saw it. (#7)

I think it's neat. I was really excited about it at the beginning of the year. (#8)

I think it's fantastic but I've been through how many years of college. (#9)

I thought it was fascinating when I first saw it. It makes things so much clearer in their minds. They know place value more than the other math group. (#15)

I have mixed emotions. I saw real value in the Minicomputer in some areas, but we had so many kids who hadn't had it that I think it would be undesirable to make the children master it. (#14)

I enjoyed it in the first grade. I didn't enjoy it as much in the second grade. In first grade the lessons seemed more interesting leading up to the Minicomputer. (#12)

I think it's good. (#13)

I think it's fantastic. I'm all for it. I don't think there are very many second graders who could add positive and negative numbers, or add three or four 3 digit numbers. (#10)

I think it's a real help, however, I might tend to use it less. I think they were ready. (#11)

I like it. (#16)

It's fascinating. This probably is the secret of the program.  
It seemed to create some kind of understanding the children  
in the past didn't have. (#17)

I think it's a good thing. To them it sounds big. (#18)

In summary, the responses to the student attitude questions were favorable toward CSMP. All of the teachers felt their students liked CSMP better than other math programs. Eight teachers felt the average and above average student liked CSMP better, while six teachers didn't feel there was any particular type of student who liked CSMP better. Five teachers felt the slower students liked CSMP the least while seven teachers didn't feel there was any particular group of students that disliked the program at all. The advanced content and richness of the program appealed to the students who liked the program the most and also caused the most difficulties for those who liked the program the least. The teachers indicated that most of the students could use the Minicomputer fairly well although most of the students preferred not to use it. All of the teachers liked the Minicomputer.



### New Students

"What special things did you have to do for students who entered the program at the beginning of the second grade?"

"What special things did you do for the students who entered the program later in the year?"

"Should more attention be paid to the problem of new students in the teacher's guide?"

These questions were intended to get the teachers' responses on the problem of students entering the program at various times during the year and how the teacher tried to help these students.

For the students who entered the program at the beginning of the school year the problems for the teacher were not quite as pressing as they were when the students entered in the middle of the year or later. At the beginning of the school year the lessons themselves were a review of the first grade program and the teachers could introduce the content unique to CSMP to the new students at this time. In conjunction with this the teacher helped the new students by working with them individually and pairing them with a good student. As expected the new students needed the most help with the Minicomputer. A summary of the teachers' comments about the special things they did for the students who entered the program at the beginning of the second grade is given below.

I found myself going over and re-teaching certain topics. I was trying to go for the mastery side of it. It would have been better if I had just gone on. (#1)

I had only one who was in the top math group. (#2)

Pulled them out and gave them loads of drill with number facts, Minicomputer, and the number line. (#3)

I got some of the first grade material and had some of the brighter ones work with them as partners. (#4)

Just helped them a little bit with the Minicomputer and if they needed extra help I'd have a good student help them with the Minicomputer. (#5)

Our materials were late in arriving so we just practiced on the Minicomputer. They didn't have any problems. (#7)

At the beginning it was a bit of a review anyway so the Minicomputer was the only area that they really needed any help on. (#8)

Had none. (#10, #15)

Since I had never taught the Minicomputer before, I took the special group in an additional math period and I did the first grade Minicomputer lessons every day for several weeks. It's a good idea if you can arrange it. (#14)

Show him negative numbers, the arrow diagrams and how the Minicomputer worked. He was a bright student and caught on quickly. (#13)

I worked with her for a short time at recess a few days and she caught on really quickly. She only needed help on the Minicomputer. (#11)

During the late bus rider time, I would spend time on the Minicomputer. This was the only thing they had difficulty with and after 2 or 3 days it was O.K. (#16)

Spent a little time individually with them when the others were busy. (#17)

I would take one of the workbooks and begin there. Actually I just taught them what the Minicomputer was and how to use it, and they seem to be able to pick it up. (#18)

The teachers followed basically the same procedures for helping the students who entered the program later in the year as they did with the students who entered in September.

The new student received individual help from the teacher or a classmate at recess time, during workbook time, and after school. Depending on the student's ability level, learning about the Minicomputer posed the most problems for new students. The only other area which posed particular problems according to one teacher (#5) was arrow diagrams that contained return arrows.

All but two of the teachers (#5, #12) felt more attention should be paid to the problems of students entering the program in the middle of the year. Two of these teachers (#3, #4) thought a diagnostic testing booklet would be helpful while two other teachers (#16, #17) felt an outline of what lessons should be stressed would be helpful. A summary of the teachers' comments about including suggestions and materials in the teacher's guide to help with new students is given below.

It would help. I don't know exactly what could be done. (#1)

No I don't think so but it would be good if you had a checklist of what you think the essential things are. (#2)

Yes definitely. A work booklet on arithmetic background where we could see how much they know. (#3)

Yes I think so. Maybe some diagnostic testing and maybe some information they could have in their own hand to kind of help them. I don't know. (#4)

I don't know if that's necessary because if the teacher has taught it from the beginning then she knows what the child needs to catch up on. (#5)

Maybe so. I don't know what. (#7)

I don't know. (#8)

Yes. I think if they come out with a teacher's guide for remediation that would take care of the problem. (#9)

If they could go to a first grade lesson on the Minicomputer while they were taking the second grade program. (#14)

I don't know what the teacher's guide could do. It's just that you don't have the time in the classroom. (#12)

Yes I think if the second grade teacher knew how the Minicomputer and other things were introduced in the first grade it would be helpful. (#13)

Yes. It would be helpful but I don't know what. (#11)

Yes. It would help to have some type of outline and an introductory book that you could give the child. (#16)

It would help if we had an outline of lessons and which ones I should stress or what I should pull out and introduce. (#17)

You might mention that using the workbooks would be one way of picking them up. (#18)

From the responses the following conclusions can be drawn. Most of the teachers gave the new students individual help whenever free time was available. Most of the individual help was needed to learn the mechanics of the Minicomputer. Students who entered the program in the middle of the school year or later experienced the most difficulties. Most of the teachers felt more attention should be paid to the problem of new students in the teacher's guide.

### Slow Students

"What type of special help did you give to slower students?"

"Do you think that this program is as appropriate for slower students as other programs?"

"How appropriate is the spiral approach?"

These questions were intended to get the teachers reactions to the program appropriateness for slower students and to find out how the teacher was able to help these students.

The responses to the first question about the type of special help the slower student received were similar to the responses the teachers made about the special help they gave to the new students. Small group review, or individual help whenever possible was attempted by all the teachers to meet the needs of the slower students. Seven of the teachers (#2, #5, #9, #11, #12, #13, #14) also had the slower student work with a student tutor. A summary of the teachers' responses concerning the type of help given to the slower student follows.

When we would do workbooks I would take a group of students who had the same problem and work with them on it. (#1, #7)

During workbook time I would check them first, give them extra time to finish a workbook and I told them to ask their partner who was a bright student. (#2)

I pulled them out in groups and gave them remedial help. (#3)

I made up extra problems along the lines where their weaknesses were and we had sessions whenever I could or when a helper or student teacher came in. (#4)

I would give individual help, and give them the easiest level workbook and have kids who were doing well in the program help them. (#5)

We worked individually as the rest of the group worked on a worksheet or sometimes I would repeat a certain lesson much more slowly and in more depth. (#8)

I either pair them up with one of the brighter kids, sometimes kept them in from recess, or gave them extra homework. (#9)

When I had a student teacher, I would take them out and help them individually and I've got some first grade workbooks and had them work on them. (#15)

We didn't demand they do a second worksheet or work any faster than they could in the workbook series. We also used student tutors and individual teacher help. (#14)

Toward the end of the year, it was more of putting them with one that could do it and having them explain it. (#12)

I would try to work with them on a one-to-one basis whenever I could and sometimes I paired them up with someone that could do it. (#13)

A lot of small group review. (#10)

I put them together in a small group and gave them individual help or if I was busy I'd have them work with a friend. (#11)

Didn't have any. (#16)

Just giving the extra individual help. (#17)

I had the slow students and I almost had to teach them individually. You have to give them more time. (#18)

The teachers reactions to the question concerning the appropriateness of CSMP for the slower students were mixed. Nine teachers felt CSMP was at least as good if not better than other programs for the slower student while three teachers responded negatively about CSMP in this respect. A summary of the teachers responses is given below. The tape ran out on one teacher (#1) so her responses were not recorded for this or the next question.

It has the Minicomputer so the slower kids can go through a lesson with the teacher. There is some success. (#2)

I would think so. With this program the kids get an idea of why we're working with numbers or why we're doing the arrow road. (#3)

I think if I had the time to really work with the slower ones, I believe they would come out further in the long run with this program. (#4)

The only thing that might hold the slow learners back would be the Minicomputer. (#5)

I don't know. The ones I've had problems with I might have had problems with them in other math programs. (#7)

No. It's frustrating for them. The pace is too fast, they don't get enough repetition of the skills and some of the concepts are too far advanced for them. (#8)

I don't think it meets their needs. It's like the other program in that respect. (#9)

Yes. (#15)

4.3

I think so. (#14)

I think it's as appropriate as a standard math program but I think there are programs on the market or in the process of being researched strictly for the low math students. (#12)

I only know about one other math program and that was just a lot of drill and I'm not sure how much they learned that way either. (#13)

I think so because of the interest. (#10)

I would say probably more. (#11)

I've only taught the above average student so I don't know. (#16)

I think more so, really. It's more fun and I think they try harder. (#18)

I just had the average so I don't know. (#17)

Of the nine teachers who responded favorably towards CSMP, four teachers mentioned different aspects of the program they felt helped the slower student. One teacher (#2) felt the Minicomputer helped the student follow a lesson with the teacher and achieve some success. Another teacher (#3) felt CSMP was more meaningful for the students. The other two teachers (#10, #18) felt CSMP was more interesting for the students and would hold their attention longer.

One of the teachers (#5) who responded negatively toward CSMP felt the Minicomputer was the only part of the program which might hinder a slow student. The other two teachers (#8, #9) felt CSMP didn't meet the slower students' needs. Teacher #8 added the pace was too fast; there was a lack of drill on basic number facts, and the content was too advanced for these students.

The last question of this section asked for the teachers opinion of the appropriateness of the spiral approach of teaching for the slower students. Eight teachers (#3, #4, #5, #9, #11, #12, #14, #18) felt the spiral approach was good for the slower students as the variety of topics covered each week helped to keep their attention and allowed them to experience success on some topics. Four of these teachers (#4, #5, #9, #12), however, added that they felt that unless some drill was included, the slower students had a strong tendency to forget a lesson when it was brought up again. Five teachers (#2, #7, #8, #10, #13) were not entirely satisfied with the spiral approach for the slower students. They felt the pace was too fast and more repetition was needed at the time a concept is introduced. One teacher (#15) was undecided as to whether the spiral approach was the best way.

A summary of the teachers' comments about the appropriateness of the spiral approach for slower students is given below.

It's not completely satisfactory. I think kids do need drill.  
(#2)

I think it's good because it goes back and picks up things. (#3)

I think it's good but I have one criticism to make and that's unless you work harder at their weak points when you come back to it they still are not sure of it. (#4)

I think it's pretty good, the kids don't get bored with one thing. Its disadvantage is that some of them forget the lesson when it's brought up again two weeks later. (#5)

I don't like the spiral approach with the slower students. I think they need more repetition at the time it is introduced. (#7)

They don't feel comfortable with the pace and organization. (#8)

I like the spiral approach with them. They seem to be so easily bored with anything and this doesn't force them to drill on anything for too long. It should be modified somehow to deal with all the kids. (#9)

I don't know. It keeps their interest more but they do forget from lesson to lesson. I don't think it hinders them that much but I can see where they do learn more by repetition. (#15)

Very good, it's higher for their attention span and the familiarity of coming back to it again and again. It's very good. (#14)

I guess it's probably better because you come back to it more often. But I think they need more drill. But that's a complaint with the regular program too. They don't go back enough. (#12)

I think it confuses a lot of them because they don't really get enough practice in it to understand it well enough. (#13)

That's what I don't like about it. Although it does hold their interest. I think maybe a slower spiral. (#10)

I would say fine, it does a good job. (#11)

I didn't have any of the slower students so I don't know. (#16, #17)

I think it's the same with anyone. If you give them too much of one thing they get frustrated and bored. (#18)

In summary, the teachers tried small group review, individual help, and student tutors to meet the needs of the slower students. However, there was little consensus of opinion concerning the appropriateness of the program or the spiral approach for the slower students. What some teachers saw as a weakness (the Minicomputer, the lack of formal drill, etc.) other teachers saw as its strength.

## Teacher Training

"Do you think the orientation and training you received was satisfactory?"

"What is the minimum preparation a second grade teacher would need to successfully teach CSMP?"

These questions were intended to get the teachers reactions to the teacher training workshop they attended before using CSMP materials and their opinion of what training is required to be able to teach the program successfully.

Seven teachers (#4, #7, #8, #11, #16, #17, #18) enjoyed the workshop and felt training they received was sufficient for them. One teacher (#3) felt the workshop could have been longer and more attention paid to the geometry lessons. Four teachers (#1, #5, #13, #14) were not at all pleased with the workshop. Three of these teachers (#1, #5, #13) felt the workshop was too theoretical and did not include enough demonstrations of the lessons and materials the teachers would be using during the year and one teacher (#14) felt she did not receive enough practice with the Minicomputer.

Two teachers (#10, #15) did not attend the CSMP sponsored workshop in the summer but received training from their district's CSMP coordinator. Both of these teachers did not think the training they received was very beneficial and felt the teacher's guide was sufficient. Three teachers (#2, #9, #12) taught CSMP to first grade classes in 1973-74 and were teaching CSMP to second grade classes in 1974-75. These teachers did not attend a workshop or receive any specific training in the use of the second grade materials. Thus they were not asked any of the questions in this section.

A summary list of comments regarding the teachers' reactions toward the training they received follows.

I wasn't going to get a refresher course in math, I was going to get something that I could use more directly with the children. Those four days that I spent, did not do that for me. (#1)

It could have been longer. I don't think they paid enough attention to geometry. (#3)

Yes, I do. We touched every aspect of it and I did understand what I was trying to get over to them. (#4)

It was kind of tedious. I don't think it was necessary to do all those homework problems. I would have liked to have seen a few demonstration lessons. (#5)

Yes. (#7, #16, #17)

Yes. It was an exciting week. (#8)



More than enough. I just began teaching with no introduction and had to make up those hours during the year. I thought it was a complete waste of time. I thought the guide was self explanatory. (#15)

I felt throughout the year I needed more help with the Minicomputer. (#14)

No. I would have liked to have done more of the lessons rather than so much of the theory. (#13)

I was given some of the material from the workshop but it didn't help me much. I thought the manual was very explicit. (#10)

I wasn't able to attend all of it but I felt the three days I got were enough. (#11)

Yes. Anything you participate in is more beneficial. (#18)

The responses of the teachers concerning the minimum preparation a teacher needs to teach CSMP ranged from one hour to two weeks. Five teachers (#5, #8, #14, #17, #18) felt a one week workshop would be sufficient while five teachers (#1, #10, #11, #15, #16) said a full week was not necessary. One of these teachers (#15) felt an hour or so discussing the Minicomputer would be more than enough. Three teachers (#3, #4, #13) felt a one week workshop was not enough. Two teachers (#1, #3) felt part of the workshop should be held sometime during the school year so the teachers could discuss the problems they were having.

A summary of the teachers' responses concerning the minimum preparation needed to teach CSMP is given below.

The four day period would be enough if you saw a class using the materials. Also after you've had some experience with the kids there should be a get together to discuss what you and the others are doing. (#1)

I think a week, but two weeks would have been better. Or maybe one week in the summer and then when you're using the materials, let you come back with any problems you're having. (#3)

Maybe a little longer than a week. (#4)

I guess anything less than a week would not be enough so I'll say a week. (#5)

I don't know. (#7)

About a week. (#8)

I would think an hour or so just to show what the program is about, and how the Minicomputer is used would be more than enough. (#15)

A week is O.K. They should get very practical and hit those things that you are going to use in class. (#14)

Maybe a week, a week and a half, maybe 2 weeks. It depends on how they were going to present it. I would like to see a lot more practical stuff in the workshop like how they introduced some of the things in first grade, how to handle new students, and their ideas about how you should approach it. (#13)

I think a workshop would be helpful just to acquaint me with the materials. (#10)

I think a couple of days. I think the manual was so explicit that not much more is necessary. (#11)

I don't think a full week is necessary but it did a lot for my morale. (#16)

I wouldn't want to teach it without the week's workshop. It put me in the frame of mind that I needed to be in. (#17)

I think the program we had was adequate. I don't think you could have much less than that. (#18)

The teachers seemed to agree that some sort of a workshop should be provided for teachers beginning to use the materials for the first time. While the majority of the teachers agreed their training was adequate some of the teachers felt the workshop was not practical and did not meet their needs.

### Parent Reaction

"How extensive has parent reaction been?"

"Have there been any 'presentations' about the math program for parents or community groups?"

These questions were asked to find out the extent and nature of the parent reactions which the teachers received and the extent to which the parents were made aware of the different aspects of the program.

The tape ran out on one teacher (#1) so her responses to these questions were not recorded.

The extent of the parents' reactions apparently were not out of the ordinary. Five teachers (#2, #10, #12, #13, #14) indicated they didn't receive any comments concerning the program one way or another. The rest of the teachers indicated a slight or moderate degree of parent reactions.

Overall the parent reactions which were received by the teachers were favorable towards the program. Seven teachers (#7, #8, #9, #15, #16, #17, #18) did not report receiving any first hand negative reactions at all. One teacher (#8) reported being told by parents who were excited about the program that some parents were disappointed in the program. One teacher (#3) reported some negative reactions about the content of the program but the parents accepted it after a discussion and a demonstration of the materials. Three teachers (#4, #5, #11) indicated some parents have doubts about the appropriateness of some of the materials, especially for slower students. One teacher (#11) added that some parents objected to their child being used as a guinea pig.

The summary of responses of the teachers concerning parent reaction is given below.

Very little. The parents have never said much. I've just never heard any comment at all. (#2)

At our first parent-teacher meeting I had about 8 parents show up saying, "What are you doing." They were mostly concerned about the Minicomputer. I demonstrated it to them and they said, "As long as Johnny is getting it I'm not worried." One parent was concerned about teaching negative numbers to his son. I explained to him why we used negative numbers and he didn't bother me any more. (#3)

They have been interested in the program. The parents of the youngsters who are able to really perform have been surprised at the things they could do. The parents of the slower children have been wondering how they could help and whether the program was good for them or not. In general, they've been well pleased. (#4)

One parent was excited about the program and wanted to get her son in it. For the most part the parents seem to like it. They are amazed at some of the things the kids are doing and feel helpless because they don't understand the Minicomputer. They do have some doubts about whether the kids will be able to do problems on their own without any crutch (Minicomputer). (#5)

The verbal parents have been excited about the program and feel their child has been able to expand their mathematical but they have told me that there are other parents who are disappointed in the program. The only first hand information I've gotten is from the excited, eager parents. (#8)

Some of the parents were interested in knowing if the children were going on with the program but very few parents even mentioned the program. (#7)

The parents that I talked to liked the program. Of course they were the parents of the brighter students. (#9)

Parents really like it and if we weren't going to have it next year I know 4 or 5 parents that were going to go to somebody to get it. They were very impressed with it and I think they really like it. (#15)

This being the second year; it was just taken for granted that this was math. (#14)

We haven't had any. (#12)

I haven't heard very much. Nobody's ever made a comment one way or another. (#13)

I really haven't gotten any reaction. I'm sure if it would have been unfavorable I would have received letters. (#10)

A few of the parents have objected to the Minicomputer. They didn't want their children to depend on it. They're upset that their child is being used as a guinea pig. The parents that attended a presentation of the Minicomputer at an open house were amazed. They weren't the ones that complained. (#11)

At conference time, two school board members whose children I have, were thrilled with the program. I've told the parents that if their child has any conflict to contact me and no one has contacted me yet. (#16)

Just that they were fascinated with the ability of their children to do the kind of work that they were doing. I didn't have any bad reactions. (#17)

I think most of them have been pleased with it. The ones I have talked to have been. (#18)

Only six teachers (#3, #4, #5, #8, #9, #11) reported knowing of any presentation about the program to the parents or community groups. Four of the presentations occurred at an annual parent-teacher meeting. One teacher (#9) held a study group for the parents who wished to attend, to introduce them to the materials in the program. Another teacher (#5) reported there was a demonstration of the lessons and materials to the mother's club, the PTA and at a conference for the county teachers.

In summary, the extent of parent reactions to the program was moderate. Most of the reactions which were received by the teachers were very favorable toward the program. Only four teachers received any slightly negative parent reactions.

### First Grade and Second Grade Comparisons

"How does the second grade program compare with the first grade program?"

"Have you found that some of the students who couldn't get elementary concepts in the first grade are finally getting them in the second grade?"

Only three of the teachers interviewed (#2, #9, #12) taught the first and second grade CSMP program. These questions were asked to get their comments concerning a comparison of the first and second grade program and the success or failure of the students who had difficulties with the first grade program.

Two of the teachers (#2, #12) felt the first grade program was more interesting than the second grade program. One of the teachers (#2) also felt the pace was much faster in the first grade program. The other teacher (#12) also felt the second grade program did not meet the needs of the slower students as well as the first grade program. The third teacher felt the first and second grade programs were about the same.

All three teachers felt most of the students that could not understand some of the elementary concepts in the first grade were still having the same kind of problems in the second grade.

It is apparent from these teachers comments that they felt the first grade program was superior to the second grade program and that the difficulties the students experienced in first grade were not completely attended to in the second grade program.

Other Comments

"Do you have any other comments you'd like to make about the program?"

This question was asked to allow the teachers to add anything they would like to say which had not been asked in the interview.

Six teachers (#3, #8, #10, #13, #14, #16) indicated there was nothing they wanted to add. Three teachers (#4, #7, #12) reiterated how much they enjoyed teaching the program and one teacher (#18) indicated she was looking forward to teaching it again next year. One teacher (#5) brought attention to a printing error in the manual and another teacher (#17) expressed interest in seeing the results of the testing program. The tape ran out on five teachers (#1, #2, #9, #11, #15) and their responses were not recorded.

## Conclusions

From all the questions asked and all the responses given in the interviews a number of conclusions may be drawn.

1. The teachers were favorably impressed with the overall program and many specific aspects of it. Many indicated their opinion of the program had become more favorable as the year progressed, although some teachers still expressed concern about the program meeting the needs of the low ability student.
2. The teachers felt the overall CSMP program was superior to other programs which they had taught especially in regard to content, student attitude, and learning.
3. The Minicomputer and the variety of higher level concepts were viewed as being the best aspects of the program while the difficulties encountered by the low ability student were mentioned as the worst aspect.
4. The teachers felt CSMP does not involve appreciably more class time than other programs and the suggested times for the lessons in the teacher's guide were reasonable.
5. Generally the teachers followed the teacher's guide but did make slight adjustments in the lesson sequence and used supplementary materials especially for basic addition and subtraction facts.
6. The teachers found the materials easy to manage and felt the workbooks, worksheets and class activities supplied enough information to decide which students needed individual help. Also about half of the teachers indicated a need for testing materials or suggestions for topic emphasis.
7. All the teachers felt the students enjoyed CSMP more than other math programs with many teachers feeling the average and above average students liked the program the most and the low ability students liked the program the least.
8. Many teachers felt the students who entered the program in the middle of the year or later experienced the most difficulties and more attention should be paid to the problem of new students in the teacher's guide.
9. There was little consensus of opinion concerning the appropriateness of the program or the spiral approach for the slower students.
10. Parent reactions, though not extensive in most cases, were almost always positive.
11. All teachers indicated some special training was necessary to teach the program.



These conclusions leave one with an overwhelming impression that the teachers have a very high regard for the program. The only problems mentioned with any consistency were the difficulties experienced by the slower students, and the need for more emphasis on the basic addition and subtraction facts. As mentioned at the beginning of the summary, the reader is urged to at least skim the transcripts of the interviews in the Appendix.

### Appendix

The following transcripts were made from the original tapes of the interviews. The transcripts have been edited only slightly to remove any references by which a particular teacher might be identified.

## Interview 1

I: Now that you have taught the CSMP program for nearly a year what are your general impressions of it?

T: I like it because it's broader. This was my first experience with some second graders because I had been teaching third grade so I had lots to learn. I find that since they don't have that much to read themselves that they seem to grasp a lot of things that if they had to read it and then follow some specific directions they would probably have gotten lost somewhere along the way since they do have a reading problem.

I: Are there any other main differences between this program and other second grade math programs?

T: I think this program gets the children more involved than any other second grade program, as far as I got a chance to compare because really I had so much material to go through and I didn't really have a chance to go through a second grade program and really closely examine it. I had to learn all of these plus the children. And in the class that I have, there are 30 children. Just about everybody wants you to have enough ears and enough voices to really respond to them when they want it. They demand so much out of you. They almost want individual attention and you really can't give them individual attention.

I: In what ways if any did your perception of the program change during the course of the year?

T: Now at first in looking over the sheets and some of the lessons I thought some things would be difficult for me to get across to the children and I was surprised in the fact that I could get somebody in the class to respond. You might have to explain a situation to them but you found that the children were really in it. And I thought that was good. And in some instances everybody wanted to do it so you ran into a problem in that way. They had a lot of confidence in themselves - even if maybe they would arrive at the wrong solution they were all anxious and eager to participate.

I: What do you think are the best aspects of CSMP?

T: The best thing I think is that Minicomputer. To me that's the best thing. Now it proved to be a problem to me because some of the children had learned from the old series because I did not get a full class that had started - the bulk of the children had not. And they didn't really gain the confidence that I thought that they should have in working with the minicomputer in the semester that I have worked with them. But I noticed that when they have to do some things with it, they do that more readily than they do others. The pattern seems to be about the same as I found with my third graders; if they are subtracting they get those signs confused. And I've found that some of these children were still doing that. They can tell you that the sign says take away but they don't do it.

## Interview 1 (continued)

I: What special things did you have to do for the students who entered the program at the beginning of second grade?

T: Well now see at the beginning we were all beginning together. The teacher was beginning just like the students were. I was well into the program before I knew some of the things that would probably make it a little easier even for me. I found the handbook that the teachers in the lower grades had used - that if I had had in my hand would have helped. I found myself going over and re-teaching and I was cautioned that you don't do this, that this works on a curve so you just keep on going and I wasn't doing this at first. I was just trying to go for the mastery side of it.

I: How well did it work? Do you feel that it would have been better not to use the mastery approach with these students?

T: I think so. I think it would have been better if I had just moved on because I do see where there is a lot of repetition. And I didn't realize it. I had some slight problems because of the fact that the children couldn't read and that was sort of frustrating to me and then I didn't know how I was going to deal with this problem because I wasn't aware that I was going to be the one that was going to do a great deal of the actual work with the children. I was thinking that they could do it independently and this sort of frustrated me that I found so many that were so dependent.

I: Did you do any special things with the children who entered the program later in the year?

T: Well basically what I would do would be to try to help them gain some confidence in themselves. That even though this was something new to them that they could - if they would just try, that they could do it. I would try to get them to participate as much as possible and then when there were activities where they could get into groups I'd try to fix the group so there would be somebody who would know what was going on and I figured that they might learn from each other too.

I: Did you have any special problems teaching these new students arrow diagrams or Minicomputer - any particular area that caused the most problem?

T: Well actually I found problems in all of those areas since these children that I got were sort of - let's say handicapped - that I would notice that they would just sort of sit. They just didn't dive into it and they just didn't seem as anxious as I would hope that they would. I think I was really more enthusiastic. So enthusiastic about it that I was disappointed in the fact that I didn't really see this as fast as I thought I should have seen this in these students.

I: Do you think more attention should be paid to this problem of new students in the teacher's guide?

T: It would help - I don't know exactly what could be done. But I think since we do work in a situation where you don't have a fixed group that some consideration should be given to that kind of thing.

## Interview 1 (continued)

I: What are the worst aspects of CSMP?

T: Now the worst to me would be the kind of in-service program that we had. I wasn't going to get a refresher course in math. I was going to get something that I could use more directly with the children. Those four days that I spent this past summer did not do that for me. It really and truly made me realize how long I had been out of school and how much math I had actually forgotten more than to give me a real good picture of what I could do with a group of students with this program.

I: What do you think is the minimum preparation that a teacher needs to use the CSMP program successfully?

T: Well, if it were in a different kind of set-up where you actually saw or maybe you were the student in the class and the instructor would do like you would do with your class. Then the four day period would probably be enough. But following the four day period something after you have had some experience with the children so that you could see what somebody else did with this kind of thing. Not just the four day period and then you go into it. We did go to St. Charles and we did see the outcome of the use of the program but there were two teachers. This makes a difference and they did two periods a day with it. This makes a big difference. But coming back and working with the children I got disappointed a lot of times because I would think in terms of the fact that all of the children became anxious to use the materials to the extent that they didn't want to go out to recess. Now I didn't find my group of children like that. But that impressed me. But then I had to stop and think, now there were two people so they could discuss what problems they were having with the child and they could go back and work on it. I didn't have that kind of time. Really we run out of time for many things. Our program is so involved that we run out of time for the things that we have to do. Then after I started moving into the program I got the language program. So I was working two programs with no choice. At first I wasn't supposed to do this but a teacher in the first grade was supposed to get the language program since I had the math program. Then it turned out her children were too young for the language program. So then it fell my lot to be learning two different things plus all the other things and I sort of got bogged down.

I: How long is your math class every day?

T: Sometimes I was breaking my class up. If the children became restless and their span of attention became short then I would break it and I would do it in two sessions. I might do a little of it in the morning and then complete it in the afternoon to keep from losing them. When you're working with that many children with that many differences if they wanted your individual attention you couldn't give it to them. I have a group of children who for some reason if they get tired they have to hurry up, they have an emergency and they have to leave the room. And then that child would miss if you did anything so I have to gear things all around that kind of thing.

I: Well the time that you spent in math class - how does this compare with the time usually spent teaching math?

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## Interview 1 (continued)

- T: Well sometimes you'll be guilty of running overtime. Say for example you said you were going to do something for 30-40 minutes, well if you found that the need was there it might run into more time and I don't know if this is good or bad but considering the group of children that you had you'd have to gear it that way. If some of them couldn't stand any more than 25 minutes you'd cut it. If you found out that it was going to involve a little more time for them to get what was going on then you'd have to lengthen it. And you might find yourself dwelling on something. Like I say I don't know if this is good or bad. I don't know if you're supposed to do this or not but you have to try everything to see what will be of more benefit to the children.
- I: Were the suggested times in the manual reasonable?
- T: I think so. Sometimes I didn't take as much time with things and sometimes I would take that amount of time. And if there were lessons that were just 10 minutes then I might move from one to the other.
- I: When weren't they reasonable? Can you recall any specific or general topics in which the times weren't reasonable?
- T: No. Not really. Sometimes I might spend a little more time on something because maybe you'd have an interruption or something like that and you have to spend a little more time on it. Maybe you found out a child was really so far out that it would take a little more time to explain it or you might have to have another example or something like that.
- I: Did you repeat certain lessons?
- T: If I thought that the group really needed it I would repeat a lesson. I would repeat that, say for example, that very next morning. I'd go over certain things and then try to get it fixed up.
- I: Do you recall any specific topics where you had to repeat the lessons more often than others?
- T: Some of those arrow diagram lessons because those were really disappointing to me. I have two number lines. I have the one that they can touch down below and I had already put one up before I got the CEMREL material and I just decided that I wouldn't take it down so I put the one that I got from CEMREL, I laminated it, and I put it down low so the children could actually get up there and touch it if they really needed this kind of mechanism. But I still found out that they get confused with the number on the left. They might get the right side but the left side seems to give them a problem and I would try different techniques of showing ways that you can touch the number line and have them look back or we count backwards and different things to do to try to get this fixed. And I'm still not so sure that I have the bulk of them doing what I'd like for them to do as far as those are concerned. They seem so dependent that they try to wait to get somebody else to give them some assistance in the class.
- I: Did you change the order of the lessons or did you follow the sequence?

## Interview 1 (continued)

- T: I changed some because when it came to some where they were doing some game playing I might have even just skipped over that game playing.
- I: Did you use supplementary materials?
- T: Well I didn't use too many supplementary materials. We have a math workbook in the room and because I didn't know whether some of these children would get caught up in the situation where they would leave me and go to another school I did expose them to that and I have a peg board in the back of the room. Some of my materials I just wouldn't put out because I didn't think this class was ready to use some of the supplementary materials that I had. I may have been wrong in doing that kind of thing but to me they weren't geared to me putting out too much for them to do. As a whole they don't like the written assignment - as a whole. Now they like it if they can go up to the blackboard and put a mark up there but when you give them their pencil and piece of paper to work themselves they'll hurry through and it may be very poorly done. And for that reason I wouldn't put out a lot of my supplementary materials because I figured they would go back there in preference to using their hands. Their coordination is very poor and I figured they needed some of this type of thing where they would have to transfer something to a piece of paper.
- I: Did you find it was a problem to keep track of the program materials, the workbooks, worksheets and the manipulatives?
- T: No. I didn't have a problem keeping up with them.
- I: What sort of system did you use? Did you have a file cabinet that you could keep the materials in or - ?
- T: I had a little box that I filed things in. I got a set of file cards just like they use in the office.
- I: How did you assign the workbooks to the students?
- T: I followed the procedure where you give certain ones to the average students and the slower ones you give certain ones. Then I saw a slower one turning up the nose and frowning and so then I said well this child has a problem. She has a sight problem and she really isn't capable of doing anything independently so I thought well if she copies - maybe some of this will stick with her so I started giving her the same. I know that she's not mastering a lot of it but she frowns and I had a little problem from the home with her and so then I thought well to keep from creating any more of a problem maybe I'll just let her have the same thing that everybody else has. But a lot of them I would follow the suggestions. Now this is what I found about us having so much to do that many of the children didn't respond even there. They didn't move in the series from one book to the other like I thought they should.
- I: Did you keep track of their scores in the workbooks?

## Interview 1 (continued)

- T: No. I didn't keep a record of it because I looked at it over the front and I could see which ones seemingly were doing something with it. Like I say, I had so much going for me, I tell you I just ran out of time to do a lot of things that if you had less children that you probably would have done.
- I: Was there enough information in the workbooks and worksheets to help you decide when a student needed individual help?
- T: Well see that's what I really didn't get a chance to do was do a lot of this individual help because I really didn't have the time. This is one thing that's lacking for me. The chance to give children individual help. I could go and see if maybe they have a question, give them a start. Any time I try to call one child up you look and you've got about five or six more standing there. Well you can't keep telling them to go back to their seats and sit down.
- I: Do you think there is a need for testing material for the teacher to evaluate the students to be incorporated into the program?
- T: If there were no actual testing materials, if there were some suggested emphasis - some suggested topics you want us to show where the children should really be encouraged to respond favorably to a certain activity since this is going to be the thing that they are going to be tested on later. We ran into this kind of a problem. We had to give the children the Iowa and then I had to be sure that they would be exposed to the kind of activity that would help them to master that too. Also word problems, I had to work with the children on the side from their little workbooks on word problems.
- I: How do you think your students like CSMP compared with other math programs?
- T: They said they liked it. I asked them to raise their hands and say how many liked this better than if you had to have a math book that you had to read something from all the time and the majority of them raised their hand to say that they liked it.
- I: What type of students like this program better or really like this program?
- T: I've found some of my children who said that they really like math and when they would get a sheet they would say I like this - I really like math. And they would be working just eagerly with the materials.
- I: What is it that appeals to these students - the ones that really like the program?
- T: The thing that really appeals to them I think is the Minicomputer and then the worksheets where they don't have to do very much writing. They had the minimum amount of writing to do themselves so they really liked this fact I think. This is really a good feature of the program - the fact they didn't have to do a lot of copying or transferring of the material. And they all like to come up when we have the diagrams. They all want to put the dots on - all of them. And they all know where to put the dots. And it's fascinating to me and they all know what to do with the empty set. Sometimes



## Interview 1 (continued)

they don't get the word hatching and they might tell you, "You put those lines in there," or "You mark it off," rather than use the term but they really have grasped the idea there. And they like the one where they choose the outfits.

I: What type of students don't like the program?

T: The ones I have that really don't like the program are my slower students who really don't have enough confidence in themselves that they can really do anything. All the activities that they do, they want somebody to help them. They have formed a crutch and until they turn that crutch loose they aren't really going to like anything.

I: There's not one particular part of the program that you think turns them off?

T: I didn't ever hear anybody say "Uhh!" when we got ready to do anything. I really didn't and sometimes you have a lesson and the children will start sighing - they will let you know I wish we didn't have to do this today. They aren't inhibited in any way when it comes to letting you know "I don't like this." They will say whether or not they don't like it.

I: What is the students' reaction to the Minicomputer now at the end of the year?

T: Now at the end of the year if they see a lesson and across the top of it it says use your Minicomputer, you see them and they'll get down on the floor and they're just as busy as little beavers down on the floor working with the Minicomputer. Now I have a few of them if they have a sheet and the sheet says show 6, you'll find some who'll put the 6 in the 10's. Now they've done everything else on this particular page and this one where it says show 6 ones - I don't know if it's the position of the 6 there that makes them think they're supposed to put it over there or not. That's my only way of figuring why some of them do this because they had all the others correct. They were supposed to show 50 and they didn't have any problem with that. and if I said which one shows ones - then they'll tell you. So at the end of the year I really can't tell whether some of the response with the Minicomputer is very good or not because of the fact that we've tested and they automatically think that school is out now. It comes from upstairs where their big brothers and sisters have had their tests and they know and they go home and they discuss this. So near the end of the semester they begin to lose interest.

I: Can most of the students use the Minicomputer fairly well?

T: They might not be able to do a complete process but they can do something on it. I'll say it like this, if I say show me 92 or 100 and something they can go to the Minicomputer and show that. Now if I say show me a certain play, I have some of them that can do it, I have others who might not be able to do that kind of thing and I am kind of discouraged about that.

Interview 1 (continued)

I: But you like the Minicomputer?

T: I like it. I like it. And I would really like to see another group of children who started out lower than I am and come up. I would really like to work with a group to see because I think that the results would be much, much better. Because they moved from a book to this and they've already mastered something there and it's undoing something that they've learned and that's hard.

I: What type of special help did you give the slower students? You said you couldn't give them as much individual help as you wanted to because of the size of the class, but were you able to give them some special help?

T: Now the special help that I would give to them would be when we would do -

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## Interview 2

I: Now that you have taught CSMP for nearly two years what is your general impression of the second grade program?

T: This is my second year in first grade and first year in second grade. I got a chance to see where the first grade kids were going and I began to understand why they did some things. Now I understand why they introduced Eli. I like it. I think it's interesting. I think it is challenging to the children. I do think they enjoy it. They do enjoy math. I like it.

I: In what ways if any did you find your perceptions of the program changing over the past two years?

T: I still find that the teacher has to do extra things. I don't feel comfortable with them not knowing their facts. The bright kids pick up the facts without fact drill, of course they would most any time. I notice I have the top math students and I have the bottom math students in my class. The middle group and the bottom and a few top kids in the other group work with me part time but I don't see their math workbooks. That's really the way I can tell what kids are doing. So that's why I don't know about the whole range of kids but I know my bottom group is really kind of lost without the knowledge of the facts, especially when it comes to changing over to the math algorithms, you know the subtraction and addition algorithms. When they use their Minicomputer they do better but it's a switch over and maybe some teachers let the kids continue to use them. They may have more time to direct the kids in using them and give them extra practice when I can't. I think the CSMP program is good. It takes the kids further than I think they would go.

I: How did CSMP compare with other second grade math programs?

T: I've never taught second grade math. I was a kindergarten teacher who came to first grade who is now teaching second grade. So I don't know.

I: What do you think are the best aspects of CSMP.

T: I like the variety of math concepts presented. I like the diagram work, the logical thinking, I like the arrow diagrams, and I like the probability that they do. I like just the different variety of things and the combinatorics. I think that's good. I think it gives the kids a well-rounded picture of what math is in a sense. And I like the way they use the games. I must admit with my classes I've really had to go all out to make them interesting and appealing and entertain them sometimes to get their attention, to get them interested. Once in a while I can say O.K. we're going to just do it this way but most of the time you have to get them interested and I think it's good in that sense because the teacher doesn't think of math as a book of pages and here's these problems and you do it and that's it. You begin to try and think of ways for it to be carried along in real life. It was interesting having the first and second graders together. I have got to tell you this story for your tape recorder. In the first grade we were talking about  $\frac{1}{2}x$  and I was letting the kids give me numbers to do  $\frac{1}{2}x$  problems with and one little boy gave me 265. I talked about the fact that we must use even numbers at this point and he said "Oh no we don't need to, we can use the point board." This was a very bright first grade student. He said we can use the point board, so I said "O.K. we can, however, most of the students are only ready to do them without the point board. So you can do that next year." It's very concrete. The thing I like about it is that the kids can

## Interview 2 (continued)

check their work, especially with that Minicomputer. I think it gives kids a visual image that they can carry around in their minds. People have to have visual images that they work with besides hearing spoken messages as they are solving problems. And I think it gives them a visual image. I, in my mind, see a Minicomputer and I can make that leap where I can go backwards or forwards. And I think if kids can visualize concepts in their heads it is going to help them understand, especially in carrying and borrowing.

I: What don't you like about the program?

T: I think the pace is fast. I feel like I've got to push, push, push. I don't see the end. I'm never going to get to the end of those lessons. There's no way I will ever. Maybe it's nice for me to get a feeling at the end of the year like I'm finished and for the kids to say we've done the whole book. Now we can just play around. I'd like to see some stop. Say here is where you can stop and then that way I think a teacher can go back and work with some kids. I like the spiral approach to a certain extent and yet there's no time when we can stop using the spiral and go back for mastery. Now you might say well those are the free days. I've never used a free day in all the years I've been teaching this program. I don't have time. Enough free days hop up where the kids are so bad that I can't do math that day. The first weeks of school we don't do math every day. Our materials didn't come for about 4 weeks after school started. So all these kinds of things need to be taken into consideration I think for practical situations. You might say there are going to be some classes that are going to whiz, well O.K. but I think it would be nice if you wrote into your lesson plan, "Here teachers is a good point to go back." Say "Here would be a good stopping place for the first semester or for the first 10 weeks." Teachers could say "Now I seem to be going along at a pretty good pace. Now I can begin to go back and work with some of my students." I don't know when your first spiral stops. I don't know how many of those spiral times I have to do combinatorics before you consider that enough for the kids to get it. Maybe my kids need it 150 times. Another class needs it 6. Maybe you feel after all your experience that every class needs it about 3 times. So that's the kind of information I think would be good to know. I like the spiral approach because you don't feel now I'm going to do all these pages and now it's done and everybody should know it and how come you don't. If that's your feeling I can go back and I think kids are going to pick up more information about something. I know I do as I learn things. That day I'm not interested in learning in depth. The fact that I go back, I pick up more. But I do think that lesson plans need some more information for the teacher about how to organize. I don't think you've given enough options as far as how to use the program in your lesson plans.

I: How long is your math class every day?

T: It depends on how long I can keep them interested. I have rarely ever used the exact number of minutes in the lesson. It just depends on how the kids are today, but I plan for an hour. And then we have math workbooks three days a week for about half hour.

I: Is this in addition to that hour or is that part of that hour?

T: That's in addition to it.

I: How does this time compare with math in other programs?

## Interview 2 (continued)

- T: I think it's a little longer - it's longer. It could be about the same but in other math programs you give the kids a ditto sheet and say do it. With this one when you do the workbooks, I must be circulating among the kids and giving them assistance. They don't give you too much direction about workbooks. They just say here are the workbooks, they don't tell you how to grade them, they don't tell you whether the kid should have all the pages correct before he moves on, half of them, one of them, if he just puts down anything. I really don't have much information about workbooks.
- I: Were the suggested times in the manual reasonable?
- T: Oh yes. It's just that most teachers have to have a set up time for math and with a split grade like I had this year I had to have four math lessons. I finally split with the other teacher - 3 math lessons a day is a lot to do plus all that workbook time - that's kind of hectic.
- I: Did you repeat very many lessons?
- T: No. Never repeated one.
- I: Did you change the order of the sequence?
- T: Once in a while. I figured if a more difficult lesson could be done in the morning and a simpler one might be well to be done in the afternoon depending on the kids attention span that day.
- I: Did you use very many supplementary materials?
- T: None. Do you mean those sheets I made up on my own? I did give the kids addition and subtraction facts tests once a month. And now we are doing multiplication and then I let them make flash cards but most of the bright students are getting them all anyway which I think is par for the course. We had a time-telling unit but that's it.
- I: Do you think there is a need for testing materials to be incorporated into the program for the teacher to evaluate the students?
- T: I don't really think so, no. I mean I just made up my own. I know what the kids can do in math and I know how it compares with what they are supposed to be doing. They don't need tests. I think that's kind of useless. I like things in round numbers but I don't think that's necessary.
- I: How did you assign the workbooks to the students?
- T: I just gave them out according to their ability, the average students got book 4 the way they suggested, the slowest got book 1, the top got maybe one book ahead. And then that's how I graded them.
- I: Did you keep track of the scores?
- T: What I did was I put a check if they got them all correct the first time, if they didn't I put a question mark meaning go back and I have a question about what you did here please recheck it, if they didn't finish it I put an F for finish. And then I made them go back and do it until they got checks for every page. After a while if they missed one, depending on what it was I'd put O.K. which meant

## Interview 2 (continued)

it's not all perfect but you're telling me that you know what you are doing. Now what do the other people do? I'm just curious to know what other people do. They didn't give you any suggestions. The pages of course that are colored in, I never did have time to tell the kids "Stop and wait until I come and tell you what to do on those pages." It said instruct students before they start. I never had time to do that. I had 35 kids all doing workbooks at the same time. I couldn't tell them to stop and wait, not with my class, they'd be fooling around.

I: There was enough information from the worksheets and workbooks and activities to decide which students needed extra help?

T: Yes. Yes you can tell by their responses in class and how they look and there are many other cues that a teacher gets. Your program gave plenty. I still had a hard time getting time to help those extra kids. I have enough information to know which ones didn't know it and I like the idea that you let the brighter kids work faster on these workbooks while you help. I didn't have much time to do that with this class because we were split.

I: What type of special help did you give to the slower students?

T: I just told them to ask. In the lessons if there was a time when it said to help the slower kids I did that. During workbook time when they were working and they didn't understand it I always tried to check them first and give them some extra time in solving a problem on a page. If I wasn't around I told them to ask a partner who happened to be a bright student. I didn't have much time to go around and have individual lessons and have a little group here sit and say "Alright now we're all going to practice this." I didn't have time. So they got as much help as I could give them in those three ways. The thing that I like about the math program is the Minicomputer. A slow student can go through the lessons with the teacher and can be included and get at a level which he is ready to do. They want to do everything. If they begin to feel frustrated, the next day we do something a little different like the flags or combinations. They might be very methodical workers in writing or thinking that way. So there is some success. They do get some success in different ways that I don't think they get in other math programs, because all you have in other math programs is addition, subtraction, and multiplication and some dumb, old word problems. They don't have many words either that are written down. That's one thing your program doesn't have. I know that problem solving comes out in all the stories about Mr. Booker's bakery and how Eli and Zeke, but you don't have any formal things like that written down in your workbooks, the so called word problems.

I: Would you like to see some more like that?

T: I don't know but I just noticed that. They talk about word problems and in the old books - Billy had 10¢, he bought - . We do have those in the lessons but there is no test for them. That would be one kind of test that might be good to have. A test of reading and deciphering math and using math concepts in a written, reading situation. They do it in a hearing, verbal situation. Now granted kids who can't read well won't do well anyway so it's not necessary. But you might include some of those in the math workbooks.

I: How appropriate is the spiral approach for the slower students?

T: It's not completely satisfactory. Every child learns differently. The



## Interview 2 (continued)

brighter kids are able to do all this internalizing that we don't even know about. Some people need to write to learn. They need to write it 50 times or hear it 50 times. And this is why they might have done better in a situation where you just drill and drill and drill. Everybody does it so you pick it up. I think that's what I'm trying to point out - if you would in your lesson plans say here is a good time to, not drill for mastery, but check. These are some things that kids can do independently to check or here's some drill things. Because I think kids do need drill. I mean when you study for your Missouri driver's license test do you just whip through it once on the spiral approach and know it. No you sit down and you just memorize and memorize and I think kids need that too.

I: How well do you think your students like CSMP compared to other math programs?

T: Well I think they like it. It's hard to say but I think they would probably like it better. I think the third grade kids are going to be disappointed if they don't have something other than just straight math. The kids can have fun because I'm having fun. And I look forward to the next lesson. Making the pictures with the colored chalk - it's fun, it's nice.

I: What type of students do you think would like this program better?

T: The bright students will get the most out of it because they usually get the most out of everything, but I think every child would like it. I think it meets the needs of most kids. It meets the needs of kids who don't verbalize well because they can draw pictures and they can express themselves with arrows, they can use their Minicomputers. I think it's good for all kids. I don't think there is any kid it would hurt. I think it's good for everybody.

I: What are the students' reactions to the Minicomputer now at the end of the year?

T: They don't like to work with it, especially the bright ones. They want to draw pictures on the paper and they'll make little dots and they make mistakes. Now of course the ones who are very conscientious will do it but they don't want to be bothered with it, getting it all out. I don't know whether it's because it's too big or what. But they like it. They use it but you need to tell them every day "You've got to use it, you've got to use it." It's funny when I say "You can't use your minicomputer." they get mad at me and when I say "Oh boy now you use your Minicomputers" --.

I: Can most of the students use the Minicomputer fairly well?

T: I would say most. In my class of about 35 there are about 3 who hardly know what they are doing and that's because some of them came late in the year. I'd say there are 3 who are really bad, who can't do it with guidance. I mean these kids seem to have trouble remembering what 6 is on the Minicomputer and one day they'll remember it and the next day they won't but that's the same kid who doesn't know his short a sound either in reading after 15 months of practicing.

I: What do you think of the Minicomputer?

T: I like it. I think it's a great device. I think it's fantastic. When I showed those kids how to figure out the point board that was really neat.

## Interview 2 (continued)

That just blew their minds. It blew my mind too when I first found that out.

I: What special things did you have to do for the students who entered the program at the beginning of the second grade and didn't have the program in first grade?

T: I only had one boy because the top reading students were in my class. That means they're going to be mainly the top math group so I didn't really work with them on their workbooks that much and I think that's where you get to know them and I certainly didn't spend time with small groups of them because I had just half of the class and this was a rather awkward situation teaching this way.

I: Did you have any students who entered the program later in the year, in the middle of the year?

T: No. I had this one boy and what I did was just sent the Minicomputer flash cards home. This is what I have done with all of my students. Send home the Minicomputer flash cards and tell the parents about this. I have the brighter students teach them the plays in second grade. And this boy caught on. The Minicomputer is the only thing that they need to pick up. Arrow diagrams I think you can come in anywhere with. The other things I think they picked up along the way.

I: Do you think more attention should be paid to this problem about new students in the teacher's guide?

T: No. I don't think so. In a way it might be good if you had some kind of checklist of what you think are the essential things. I have no idea of what you people think is important to learn. I just don't know what your goals are for the kids on any one level and I do think you ought to share those with the teachers. Maybe the reason is you figure if you tell us that it's only 1+1, everybody will teach for that and won't do anything else but I think somewhere in the guide they send, should be written the minimum requirements, middle of the road requirements, and you are a whiz kid requirements.

I: How extensive has parent reaction been?

T: Very little. If I ask things will come out. One mother said "Wow she really uses that Minicomputer!" I gave the Minicomputer to the kids to take home last year and some did use them at home they said. But the parents have never said much. They've never said "Hey what are you teaching my kid, what is this nonsense?" The first year we had a demonstration of the program.

I: Was that last year or this year?

T: No. It was last year. And nobody seems excited or happy or unhappy. I've just never heard any comment at all.

I: How does the second grade program compare with the first grade program?



## Interview 2 (continued)

T: I was surprised. I felt the pace of the first grade program was a lot stiffer. And I was surprised that the second grade program didn't seem to be that way. Now maybe it's because I didn't work with the whole class. But the lessons seemed to be a lot easier. Maybe it's because I taught it once, but I just didn't have that feeling when I looked at the stuff that it was quite the same. This year the method that I chose for storing materials was not as good as last year. I'll have to go back next year. I did a lot of things new in my room this year because of the split grades and I found out that it didn't work out well and I had to make a lot of changes all the time. So the year was bad in that respect and I think the math suffered too but the second grade program seemed a lot easier. Not as much for the kids to learn. It's almost like the kids in first grade had to learn so much and second grade didn't seem that way. Now we got to about lesson 260 in the second grade which is pretty good.

I: Have you found that some of the students who couldn't get the elementary concepts in the first grade are finally getting them in the second grade?

T: Not really -

End of tape.

## Interview 3

I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?

T: I think it's a very good program but I have one objection and my objection is that it doesn't do anything to help the slower student. I've had to pull some of my students out and give them a lot of remedial help, so they could keep pace with us because if they're not with us then they begin to stray away, they begin to get noisy, they begin to move in their seats. They have to get up and walk around because they don't know what's going on. But I've found out that pulling them out and giving them just a little bit of remedial help does a lot.

I: Individually or in groups?

T: In groups. I couldn't do it individually. I think it's a very good program because I thought that if the children didn't have a background in it in first grade they wouldn't be able to do well in it at first but I've had several students that are excelling. One little boy, he's the best, and he hasn't had it at all before. This is his first year and he's doing a very good job.

I: Did you have any special problems with those students who hadn't had it in first grade?

T: Not at the very beginning - no. They seemed to pick up on the Minicomputers pretty swiftly, but if they had a poor math background to begin with then they had problems. But I don't think it's because of the program, I think it's because they had a poor math background.

I: How did you handle those students who hadn't had CSMP?

T: Basically pulled them out and gave them loads and loads of drill with number facts, with the Minicomputer and with the number line. A lot of the kids didn't know their numbers. I mean they could say them if they had it right in front of them but if you asked them to write down 8 or 17 or 52 and they couldn't do it because they couldn't visualize it. So we just worked on that for a while and then they began to come around and then things were a little bit easier for them after that.

I: Do you think this program is as appropriate for the slower students as other programs?

T: I would think so. I taught Houghton-Mifflin last year and it really didn't do too much to help the slower student either. And I think with this program kids get an idea of why we're working with the numbers, or why we're doing the arrow road, or why we're doing certain things whereas with Houghton-Mifflin you went through a demonstration, the kid responded, and then you gave them the seatwork to do. And a lot of times you weren't getting the feedback because they weren't hearing you. They weren't listening to you, whereas with this program they're jumping out of their seats to give you their answers and to give you the feedback.

I: How is the spiral approach for the slow students?

## Interview 2 (continued)

- T: It's very good. It's very good. I think it's good because it goes back and picks up things.
- I: Has your perception of the program changed during the course of the year?
- T: Yes. At first I was really gung-ho about it because my students seemed to be doing really well and then about January I don't know if it was because I got an overflow of new students coming in or what, it just seemed like everything was beginning to get bogged down, we weren't moving as swiftly as we did before. Instead of doing 2 lessons sometimes we'd get through only 1 lesson a day. Sometimes as I told you I have to pull out certain kids and let them do something else while we were doing a lesson because otherwise we wouldn't have been able to get through it. And I just felt like sometimes I was just being pressured to get through it. And another thing is you had to almost follow the sequence because when you gave out the workbooks the kids weren't able to do the items in the workbook. You had to move a little swiftly and that was the only problem I had with it. But right now seeing the results with it and seeing the kids come along, I like it. It's a good program.
- I: Did you repeat certain lessons?
- T: Yes. Minicomputer lessons, arrow diagrams, and number line lessons. This was basically for the kids who had the very poor math background so they could begin to pick up.
- I: Did you change the order of the lessons at all?
- T: I was a stickler with it until the very end and there were certain lessons that I started to pull out because I thought they would be of more use to the students than just going through it sequence by sequence. But until a month ago I followed it right to the letter.
- I: Did you use any supplementary materials?
- T: Yes. I have some math masters from Houghton-Mifflin, this is just for drill. I took some worksheets and made my own work-cards with acetate on top so they could rub it off when they got finished, flash cards, and that was about it. Oh, little shapes, little felt shapes and things like that. Otherwise that's about it.
- I: How long is your math class every day?
- T: We have two sessions. The one in the morning is about 25-30 minutes long, the one in the afternoon is shorter - about 20 minutes, maybe 25.
- I: How does this compare with class time usually spent in teaching math?
- T: Much more - it's much more. Last year when I taught Houghton-Mifflin we spent probably about 35-40 minutes per day on math. So sometimes it comes out just about right, you know with the two lessons - 20 minutes in the morning, 20 minutes in the afternoon and then sometimes you go a little bit overtime.

## Interview 3 (continued)

I: Were the suggested times in the manual reasonable?

T: Yes. I think so. Sometimes I'd finish a little bit quicker but usually it was so close, like within five minutes, that I think the times were about right.

I: How does CSMP compare with other second grade math programs?

T: Much better. It's much better.

I: What are the main differences?

T: The children get a chance to really get into it more. In the other programs you had your felt board and you presented sets and they really didn't allow too much for the kid to come up and manipulate. The teacher did all the manipulating. The other math book stressed a lot of drill whereas I think CSMP math makes the kids sit there and think about it. They have really got to sit there and think before they answer a question. I think that looking at the other math book, by January we would have finished that math book compared to what we were doing with CSMP. In fact there is nothing I can give them out of it now that they wouldn't be able to do at this time.

I: What do you think are the best aspects of CSMP?

T: I like the arrow roads. The Venn diagrams are very good, the ones where the teacher tells a story and the kid has to listen and respond. I think the games are nice - in fact I like the games but the only thing is that with so many kids in here we have to break it up a lot. We can't all play the games at the same time because it's too noisy. The Minicomputer is fine. My kids are really surprising because they're weaned from it. They don't need it anymore. But I think it was pretty good at the beginning because they could do the computations but now they're so big and bold they don't need it anymore.

I: What are the worst aspects?

T: This is kind of hard. I really can't think of anything that's that bad about the program. I think the hardest thing that I have and that's not your program, is the way my room is set up. I've got too many kids. Scheduling the lessons, trying to determine, can I present this to the whole class all at one time or will I have to break it up and send some kids over to do remedial work and present it to the students who are able to handle it. That's my main problem. But I think the program is set up find.

I: Did you find that it was a problem to keep track of program materials - the workbooks, the worksheets, and the manipulatives?

T: No. It wasn't hard to keep track of them at all. I had a hard time getting them corrected because I had so many folks, but if I had had 20 kids it wouldn't have been a problem at all. Workbook sessions - I did have to break up and I would have the first group work with me one day and the next day I'd have the other group. We could not all do it together after about the first two months because it was just chaotic. I couldn't get around to everybody. I didn't have an aide until February and still he can't get around because he doesn't know what's happening in the program so he's not too much of a help there. Scheduling the workbooks was a problem but it's again because of the class size.

## Interview 3 (continued)

I: How did you assign the workbooks to the students?

T: Usually I knew the students ability so what I would do is give the slowest students the R1 workbook and then the ones that were a little better than them the number 2's. My better kids, I would start them out with the A4 workbooks and let them work up.

I: Did you keep track of their scores?

T: Yes.

I: On the entire workbook or just the pages that - ?

T: The entire workbook, I checked the entire workbook. It took a little time but I think it's even better because I got an idea of what they were doing.

I: Was there enough information then from the workbooks and worksheets to help you decide which students needed individual help?

T: There wasn't any problem there at all.

I: Do you think there is a need for testing materials to be incorporated into the program for the teacher to evaluate?

T: No. I don't think so because you get an idea of how your students are doing from the workbooks and the worksheets. I don't think that you would need to give a test. You can get most of the information from the way they respond in class. You know who's having a problem with certain things and you can pinpoint them. And you know who's not sitting there paying attention. So I think a test would be useless.

I: How well do you think the students like CSMP as compared with other math programs?

T: They like it. They like it a lot. Even the slower ones like it a lot.

I: What type of students like this program better?

T: The average and above average.

I: Why, what appeals to them?

T: O.K. let me start with the below average first. They like it because of the colors. They can get up there and use colored chalk, use the orange rod rulers and the white rod rulers, and use the cuisenaire rods, and the colorful Minicomputer, that keeps their interest. For the average and above average students, again they get a chance to manipulate things, that's the most important thing. If they can just put their hands on it and sit up there and think, well if I put this this way is this going to be the same size or the same shape. I think that's it because it gives them a chance to work the brain and the hands too.

I: What type of students don't like the program?

T: The slower ones. I'm not going to say that they don't like it. What it is is that some of the things they cannot do and so instead of sitting there trying to figure it out they'll just turn you off. And I don't think it's because they don't like it, it's because they can't do it.

## Interview 3 (continued)

I: What are the students' reactions to the Minicomputer now?

T: They like it but they don't feel like they have to use it anymore. It was a tool at the beginning of the year. Everybody was going back and getting theirs and really working on it and loving to make the plays, but now most of them don't need it anymore. And they would rather do it in their heads. Sometimes that's not too good, especially in the workbooks when the numbers get larger. They've got to make the plays and they don't see it, especially with negative numbers. I always tell them "Go back and get your Minicomputers, it will help you out so much." And they'll go back and get it. So, I think they've come to accept it but they think it's kind of babyfied, it's first grade, you know.

I: Do you think most of the students can use the MC fairly well?

T: Most of my students can. I had four students come in within the last month and we really haven't been working with it that much and with my better students not wanting to have anything to do with it anymore, I have a hard time trying to get somebody to come over and teach Johnny how to do this. And so they really haven't been exposed to it that much. They can't really get the plays together.

I: What do you think of the Minicomputer?

T: I like it. I like it. I think it's good. At first I thought, Oh my this is just a crutch and they cannot take it out with them and do the computations on it and I thought for a while that they wouldn't be able to be weaned from it in the very beginning, but now I know that they can.

I: What special things did you do for students who came in the middle of the year?

T: Mostly paired them with students who were versatile with the MC and with the arrow roads. If they had a worksheet to do I just paired them off with the better students. I would let them come up during free time and work on the big Minicomputer, figure out numbers and things like that. They begin to catch on after a while. I thought they would really have a problem but most of them didn't, except for those four who came in the last two months.

I: Should more attention be paid to the problems of new students in the teachers' guide?

T: Yes - definitely.

I: What would be helpful?

T: I think maybe a workbook where we could just sit them down and see how much they know, not with the Minicomputer thrown in there but maybe things like the number line, the halves, and the fourths, just to see what kind of background they have and if they do know their numbers and then we can take it from there. Basically when they come in we don't know what they know. But I think a little workbook of just maybe beginning number facts, the number line, maybe some little stories that they could read just to see if they have a concept of numbers.

I: Do you think the orientation and training you received was satisfactory?

T: It could have been longer.

## Interview 3 (continued)

I: It could have been longer?

T: Yes. I would have liked for it to be longer because sometimes when I was reading over some of the lessons I thought well what do they want me to do, because I got a little confused. But I'd read it over again and I'd finally get it. Some of the geometry lessons really threw me. I'm not kidding. And I think that they didn't pay that much attention to geometry in the workshops. They paid a little attention to it but not that much. And I think that would have been a little more helpful.

I: What is the minimum preparation a second grade teacher would need to successfully teach CSMP?

T: I guess about a week. Just what we had. I think two weeks would have been better, I really do. They crammed in a lot of stuff. You're taking all of this in and you think this is great, and you're not really getting a chance to see how is this going to work in my room because it's just all coming at you at one time. Or they could have had one workshop in the summer and then one when you're using the materials to let you come back and say "Hey I'm having a little problem with this could you show me?" Or they'll tell you "This lesson is coming up maybe we'd better go over it with you in case you have some questions." I think that would be a lot of help.

I: How extensive have parent reactions been?

T: Well the parents over here are kind of apathetic. When we had our first parent-teacher meeting I had about eight parents show up saying, "What are you doing?" They're mostly concerned about the Minicomputer. I demonstrated it to them and everything and they said "Well as long as Johnny is getting it I'm not worried about it." I had one father though who is an instructor at Southwest High School and he was very much concerned about why we were teaching negative numbers. I informed him that there was no need for him to worry because his son was doing fine and there was no problem. And I explained to him why we used negative numbers and the reasoning behind it and he didn't bother me anymore.

I: Any really negative comments?

T: No.

I: Really positive comments?

T: Not really. Just like the parent said - as long as Johnny is getting it I'm not worried about it.

I: Have there been any presentations about the math program for parent or community groups?

T: No.

I: Is there anything else you'd like to say?

T: Not really.

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## Interview 4

I: Now that you have taught CSMP for nearly a year what is your general impression of it?

T: I think it's a good program and I think the smarter pupils really benefit from it. The slow ones I'm not too sure. They catch on rather slowly but when they have it, they have it. Does that answer your question?

I: What type of special help did you give to the slower students?

T: Well to be honest I made up extra problems along the line where their weaknesses were and we had sessions whenever I could. A helper and a student teacher also worked with them in small groups.

I: Do you think this program is as appropriate for slower students as other programs?

T: I think if I had the time to really work with the slower ones I believe they would come out further in the long run with this program.

I: How appropriate is the spiral approach with the slower children?

T: Well I think it's good but I have one criticism to make. I was told that if they didn't get a certain tool at the time that I was presenting it not to worry it would come back again. But I believe since I've been through the program I would stress working a little harder there and come back to it again. Because if they're not too sure at the time I'm doing it and then I let it go and then come back to it they're still not too sure. And I think I'd work a little harder, put a little more time, I wouldn't just let it go, I'd put a little more time on their weak points.

I: In what ways if any did you find your perceptions of the program changing over the course of the year?

T: In what ways did my ideas of the program change? Well to be frank I was skeptical at first. It seemed to be a lot of fluff. Being in the system quite a while I was used to just subtraction, addition, division, and multiplication. So when you come to probability and all these other things I thought maybe it was trying to cram too much into youngsters of this age. These kids are very young yet. But I've gotten the idea that it has been good. Even the extra part has been good and has given them a wider view, more tools to work with and I'm not quite so skeptical now.

I: How does CSMP compare with other second grade math programs?

T: Well I think I've just about answered that. They have a wider range of subject matter. Some things they touch in CEMREL that they don't touch in just the regular course.

I: Do you think this is better?

T: I think so. I really do.

I: What do you think are the best aspects of CSMP?



## Interview 4 (continued)

T: There are a lot of good ones. I don't know exactly what the best is. I think the Minicomputer is good. Is that what you mean? Something along that line?

I: Anything about the program.

T: Well the Minicomputer for the second graders gave them a real good start in place value which is very important and gave them something to work with and as soon as they understood it it really gave them something that they could work with alone and solve the problems. The workbooks were good, they reinforced what we were trying to teach them and they also gave parents some idea of what we were trying to do because I sent the workbooks home. I can't think of anything else right now.

I: What are the students' reactions to the Minicomputer now at the end of the year?

T: Well they have advanced in working the arithmetic. They hardly say anything about it now. And whenever I gave them any examples where they could use the Minicomputer they'd rather work without it.

I: Do you think most of the students can use the Minicomputer fairly well?

T: Well I think they understand it. Of course the better ones certainly do know and the weaker ones have progressed to the point where they know how to use it.

I: What is your reaction to it?

T: Well I thought it was quite good. It gave a pictorial view of the place value and we also stressed the coloring. Whenever we'd speak of a certain place value I'd have the youngsters think of the coloring of it too. And that helped out a lot, it really did.

I: What are the worst aspects of the program?

T: Well I wouldn't say it's the worst but I think it's one of the weaknesses. You've crammed an awful lot in there for them to get and at the time the weaker ones show an understanding but then when you leave them with this spiral business and come back a lot of times they've forgotten and you've got to do it over again. I did, maybe that wasn't right but that's what I did.

I: Did you have to repeat certain lessons?

T: Well, let's say I didn't repeat as such but when we came back to the spiral part, the weaknesses that they showed at first I strengthened those. I mean I worked with them harder.

I: Did you change the order of the lessons at all?

T: No. We team taught the lessons and she took one in the morning and I took one in the afternoon and we stayed consecutively that way.

## Interview 4 (continued)

I: Did you find that you had to use supplementary materials?

T: Yes I did. I used it for reinforcement. I think I told you that before. I used some things out of the old math books, seatwork really to reinforce what was presented in the CEMREL lessons for the weaker ones. The ones who were bright just went on with their workbooks.

I: Did you find it was a problem to keep track of the program materials, the worksheets and the workbooks?

T: No we had it organized in our storeroom and as soon as the material came we arranged it and we were able to find what we wanted when we got ready.

I: How did you assign the workbooks to the students?

T: Well, I don't know exactly what you mean. They were usually given the workbooks in the morning and then I would see that they followed through and if they finished then I'd give them the next hardest one in the series.

I: Did you keep track of the scores in the workbooks?

T: You mean do I have a record of it?

I: Yes.

T: No. I don't have. But we would discuss those workbooks and discuss what wasn't right and then I'd send them home so the parents could see what was what.

I: Was there enough information from the workbooks and the worksheets to determine which students needed individual help?

T: Yes.

I: Do you think there is a need for testing materials to be incorporated into the program?

T: I think it would help. At least you'd get some ideas as to how the youngsters were doing in regard to the whole set up with a testing program. I mean for the teacher to test it and see.

I: Do you have any idea of what kinds of materials or how often you'd like them?

T: Well just often enough so that you can find out if you're making progress or not, whether they're where they should be. To me we were kind of fumbling in the dark. I mean I thought the kids were doing O.K. but I didn't know how they were doing in regard to any other second graders or whether I was at the right time schedule as the other second grade teachers. I did call several second grade teachers to find out if I was just about where they were and to my surprise I found out that we were ahead.

## Interview 4 (continued)

I: Other second grade CSMP teachers?

T: Yes.

I: About how long is your math class?

T: Well I'd say it averages 30 minutes.

I: How does this compare with time spent in other second grade math programs?

T: I guess it's about comparable.

I: Were the suggested times in the manual reasonable?

T: Yes. I thought they were reasonable but some of the subject matter I thought should have more attention than others. And if I thought the time wasn't long enough - some of them were 15 and 20 minutes, I kept them a half hour anyway and reinforced it.

I: How well do you think the students like CSMP compared to other math programs?

T: I think they liked it very well. They responded very well to it. And even those youngsters who came in late in the program caught on quickly. Those who were bright enough to really catch it.

I: Which type of students do you think liked this program better?

T: I'd say the brighter students.

I: Do you have any idea of what appeals to them?

T: Well we had games. You take this lesson in probability, they really liked that. Road building and also in subtracting with what we call borrowing, the examples that needed a special play, they liked that. They liked circling the problems that needed a special play and they were able to see why we did certain things, why we circled it and why we did things the way we did. And it seemed to give them a better understanding, they seemed to get it much better.

I: Which type of students don't like the program?

T: Obviously those who can't get it. They can't quite understand and they feel left out and behind. And I didn't have time to really do a whole lot of extra work. I tried, but I didn't have time to do a whole lot of extra work with the slower ones. But in the end they seemed to catch on pretty good.

I: Was there any particular aspect of the program that they didn't like?

T: Well until they got used to the Minicomputers some of them couldn't get that. And some of them had trouble with naming the dots on the line with the magic numbers and they had trouble relating the magic numbers to the negative numbers. Those are some of the things.

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## Interview 4 (continued)

I: What special things did you have to do for the students who entered the program at the beginning of the second grade, who didn't have it in first grade?

T: Most of them had it in the first grade in CEMREL. And I had a few who had not been in it and what I did was get some of the first grade material and have some of the brighter ones who came from the other room to work as partners with those who hadn't had it. And the brighter ones caught on very well. It wasn't very long before they were coming right along with the others. The slower ones, that's where I brought in the helpers and the others to help with them.

I: How well did it work out?

T: It worked out very well.

I: Did you do the same thing for the students who entered the program later in the year?

T: Yes.

I: Were there any particular problems with any of the topics in the program like the arrow diagrams or the Minicomputer? Any special problems?

T: No. I don't think there were any special problems. It was just hard for some of them to catch on at first like with place value. But I don't think there were any special problems.

I: Should more attention be paid to this problem of new students in the teacher's guide?

T: Yes. I think so.

I: What do you think would help?

T: Well maybe we could have some diagnostic testing. And then test material at regular intervals to kind of find out what's what. And maybe some sort of a textbook but some sort of information they could have in their own hand to kind of help them see. Maybe that would work, I don't know.

I: Do you think the orientation and training you received was satisfactory for you?

T: Yes I do. We touched every aspect of it and I did understand what I was trying to get over to them. I'm not saying that I was just all shining light in getting it over to them but I did understand what I was doing.

I: What is the minimum preparation a second grade teacher would need to successfully teach CSMP?

T: Well, maybe a little longer than a week. The reason that I think maybe I got along alright with a week is because I had the background of the other mathematics too and I could see the similarity and I knew what CEMREL was trying to say about old math. Maybe I'll put it that way.

## Interview 4 (continued)

I: How extensive has parent reaction been?

T: Well they have been interested and some of them have been surprised at the things that the youngsters who are able to really perform could do. The parents of the children who have been slow have been wondering what's what and how they could help and whether the program was good for them or not. But I'd say in general they've been well pleased with it.

I: Have there been any presentations to the parents or community groups about this program?

T: Well we had open house and I tried to explain to the parents as they came in what they were doing. But as far as having the children perform, no.

I: Do you have any other comments you'd like to make?

T: No. I'd like to say I enjoyed teaching it. It was different. And the kids seem to enjoy it, they seem to get it. And the others who had trouble seemed to get more out of it than they would have out of the regular arithmetic program. And I felt at ease because I had a teammate who taught CSMP before and I looked to her as the main teacher. She was the main teacher and she guided me along. She was very helpful and we worked together. And we got through lesson 258 with the group. So I can't think of anything else I might say.

## Interview 5

- I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?
- T: I like it. I enjoy teaching it. I think the kids enjoy it. They enjoy the various activities. I feel that the different activities and techniques that are employed help the kids learn the math and they enjoy the math too. I've enjoyed teaching it and I like it and I wouldn't want to go back to teaching the old, really to be honest that's the way I feel about it.
- I: In what ways did you find your perceptions of the program changing over the course of the year?
- T: Well let's see. I don't know that they really changed that much to tell you the truth. I don't think that they really changed that much. I had a few little doubts here and there in the beginning and I guess I still have some of those doubts in terms of the materials. In some ways I think there are too many materials, in some ways. We never did get all of our materials and in some ways I just think there are too many materials because I have so much left over from previous lessons that we didn't use but I don't know that my impressions of the program have changed all that much.
- I: Did you find it was a problem to keep track of the materials?
- T: In some ways. Mainly because we had to share things quite a bit. Like sharing Minicomputer boards for one thing back and forth and since we teach math at the same time it was kind of difficult and also we had a mix up with some of the materials and we didn't get the fifth and sixth level workbooks, but we got a lot of 7 and 8 workbooks. It wasn't that hard for me to keep track of, just organizing.
- I: How did you assign the workbooks to different students?
- T: I followed along with their suggestions in the manual giving the four average workbooks to the students who were doing O.K. and occasionally maybe I'd give out the 3R ones to the average students and let them start in an easier one and if I thought I'd be working with workbooks for quite a while then I'd start at 3 and work up so they could work through them.
- I: Did you keep track of their scores?
- T: No. Not really. I'd check what they were doing and I'd have a general idea. I know who's doing what and where they belong.
- I: Was there enough information from the workbooks and the worksheets to help you decide when a student needed individual help?
- T: Yes. And the teacher knows anyway. I mean you know when they need individual help.
- I: Do you think there is a need for testing materials for the teacher to evaluate the students?
- T: It would help and I'd like to find out the results of the testing too.

## Interview 5 (continued)

I: Do you have any idea of what kinds of testing materials you'd like to see?

T: Actually I think a lot of the pages in the workbook are tests themselves so I don't really know that there is that big of a need for further testing materials since you are doing testing anyway.

I: We won't be testing the second grade students every year.

T: Yes I think probably then it would help.

I: How does CSMP compare with the other second grade math programs that you have taught?

T: It's more fun for one thing. It's more fun for the kids and it's more fun for me to teach too. And it's broader in scope and teaching a lot more concepts, probability, negative numbers and they have a broader knowledge. I think even though they may not really comprehend negative numbers, they know that there is another realm to numbers besides just whole numbers. And it's just broader that's all.

I: Is that the main difference?

T: And it's more fun. The activities are more fun for the kids and there are more things for them to do besides just do problems, there are various techniques such as arrow diagrams and other things that help the kids work out the math.

I: What do you think is the best aspect of CSMP?

T: In a way I want to say the Minicomputer but I'm not so sure that's the best one. Because some kids are still having trouble working problems on it. I guess the best aspect is presenting ideas to the kids that are of a higher math order. They can be aware of just higher numbers and even when we get into carrying, regrouping, or whatever not just tens but hundreds and thousands and so on and I've found that several of my kids, not the whole class but quite a few of them, once they know how to do the ten's carried it over to the hundred's and the thousand's and so on and they have really enjoyed working with the big numbers so I guess I would say just the idea that the presentation of bigger concepts.

I: What are the worst aspects of the program?

T: I guess I would have to say, this is more personal and wouldn't be general, but the material problem that we had this year was the worst problem. Sharing the minicomputer. That would be the worst problem I guess.

I: About how long is your math class every day?

T: About an hour.

I: How does this compare with class time usually spent in math in other second grade programs?

## Interview 5 (continued)

T: It's longer. Although in previous years I've taught the math and I'm just comparing with what I taught before, but I know the other math program that's taught here is taught for an hour too because we all group and teach them at the same time, so it's taught for an hour.

I: Were the suggested times in the manual reasonable?

T: I usually found that quite a few of my lessons ran over that time and especially the introductory lessons to various things ran over. Where it would say 20-25 minutes it was more like 30-35 minutes but since we had an hour and actually we had 65 minutes then we had plenty of time to draw the lessons out and what I would usually do is teach two lessons in that hour with a little extra stuff on the side, practicing number facts or something. So I found that we still had plenty of time and maybe I got used to spending time with each lesson.

I: Did you repeat certain lessons?

T: There was only a few. Only a very few. There was maybe a couple that just didn't sink in at all and I felt that they needed them.

I: Were they on any specific topic or just in general?

T: One was on making the backwards plays to get half of a number. They really had trouble with that at first so we went back and did that over.

I: Did you change the order of any lessons?

T: Yes I did. Especially towards the end I had to change the order. And instead of teaching two lessons in that period I've been teaching three. We've been going faster through it. So if a lesson was too long to fit into that then I'd just skip it and go on to a shorter one. So I changed the order of some of them.

I: Did you use supplementary materials?

T: I used worksheets from older books that had just number problems on them and math games for free period time and things like that but I didn't really use any math books or anything like that. I used supplementary worksheets and games and math fact cards and things like that.

I: How well do you think your students like CSMP as compared with other math programs?

T: I think they like it better than other programs.

I: Which type of students like this program better?

T: Well the above average learner and I'd say the average learner.

I: What appeals to these students?



## Interview 5 (continued)

T: The games that are used, the story telling game type things, the activities and even the probability situations that you have to find how many different outfits, they like that, especially playing the games as a team, things like that. I guess I'd have to say that. And the challenge of some of the more difficult problems that maybe other math programs would not have.

I: Which type of students don't like the program?

T: Well I can think of one person in particular who's had kind of a hard time of it all year and I'm trying to think if she really likes it or not. I don't really know for sure. I know she has trouble but that may not necessarily mean that she doesn't like it.

I: Are there any particular parts of the program that don't appeal to her?

T: She still has trouble with the Minicomputer. She really has problems with that. But whether she liked it or not I don't know. She may still like it better than the other program.

I: What are the students' reactions to the Minicomputer now?

T: Most of them try not to use it. In fact they will get it out if they absolutely cannot work out a problem but most of them do not want to get it out. They do not want to use it, they'd much rather just sit down and figure it out.

I: Will they get it out themselves if they can't do the problem?

T: Yes.

I: Can most of the students use the Minicomputer fairly well now?

T: Some of them are still having a few problems on like the fractions part of it and getting a third of a number and things like that. We still have some problems with that but I would say most of them can use it.

I: What is your reaction to the Minicomputer?

T: I like the Minicomputer. I think sometimes it's kind of tedious and it's kind of tedious to teach sometimes. The lesson says it takes 20 minutes but then you're teaching  $\frac{1}{2}$  of 3562 and then it takes a while to do just one problem and you have three more to do. So I personally find it kind of tedious sometimes. Maybe it should be in more, shorter lessons.

I: What special things did you have to do for students who entered the program at the beginning of second and who hadn't had it in first grade?

T: Just help them a little bit with the Minicomputer that's all but most of the ones who did enter it were pretty quick to catch on anyway. They caught on fairly quickly.

I: How did you work with them to catch them up?

## Interview 5 (continued)

- T: Well the thing is ours is not probably the usual situation because most of the kids who moved in to second grade were put in the other math class because it was just generally assumed that unless they came from a school that had CEMREL that they didn't have it so they just put them in the other math class, and I did have maybe three or four that came from the other math class and were put in mine because it was felt that they could handle it. Well I know one parent asked me, you know he was really excited about the program because we had a PTA presentation on it one night and he was really excited about it and asked me if it was possible if his son could be put into the program. And I said yes, I think he can handle it and he's done real well. But I didn't really have to go that much out of my way to help them catch up because they were pretty quick to catch on anyway.
- I: What about the students who entered the program at the middle of the year?
- T: There were none. And to add to the other one too, if the kids needed help I would have a good student help them with the Minicomputer. I would have them sort of tutor them.
- I: What about the arrow diagram? Did they have a lot of trouble with them?
- T: Some of them had trouble with reverse arrows and we're still having trouble in some ways with reverse arrows.
- I: Should more attention be paid to the problem of new students in the teacher's guide?
- T: I don't know that it's that necessary because if a teacher has taught it from the beginning then I feel that she knows pretty basically what the child needs to catch up on, what kinds of things that they would need.
- I: What type of special help did you give to slower students?
- T: I would give individual help and put them in easier level workbooks and I would also have kids who were doing well in the program help them on certain problems and would just have extra help I guess, extra individual help.
- I: Was there enough information from the workbooks, worksheets, and class activities to help you decide who needed the extra help?
- T: Yes. I think so. Because with the worksheets and the workbooks combined you have a pretty good idea of who needs the help.
- I: Do you think this program is as appropriate for slow learners as other programs are?
- T: I think the only thing that might hold back some slow learners is the Mini-computer. I'm just thinking of the few that I have, especially the one that I mentioned and she still has trouble with that. But I think basically once they get the mechanics of the Minicomputer I would think they should be able to work with it but it might cause more problems for them than for other groups of learners.

## Interview 5 (continued)

I: How appropriate is the spiral approach for the slow learner?

T: Well it seems that some of them kind of forget the lesson that was taught two weeks before. At least I've found that to be true. So maybe what's needed is a more intense involvement of it at the time. I generally like the spiral approach though. I think it's pretty good and then the kids don't get bored with one thing. I really kind of like it. I know it has its disadvantages and this is one of them.

I: Do you think the orientation and training you received was satisfactory for you?

T: I found it kind of tedious. I don't think it was necessary to have to do all the problems that were assigned because I can remember spending a whole evening doing homework problems and I don't think that was really necessary. And I realize that some of the teachers had some problems with it but I've had no problems with it at all and I don't know, I caught on fairly fast. Maybe it was necessary to have homework problems assigned like that but it was O.K. I would have liked to have seen more orientation in the materials instead of the brief introduction we got one day. I think I would have liked to have seen more getting into the materials that we would actually be using.

I: What do you mean by more orientation in the materials?

T: Well we only spent I think one day at the most reading over the materials that we would be using and maybe just a small demonstration of the translator and the cuisenaire rods and things like that. And maybe it would be best to perhaps look over a couple of the lessons of each thing, actually go over a couple lessons on arrow diagrams and go over a couple different lessons on the cuisenaire rods, and go over a couple different ones to see the kinds of things that would be going on because I can remember just going over one, if that. I don't know that we did that. And I think maybe a more intense involvement in the materials.

I: What is the minimum preparation a second grade teacher would need to successfully teach this program?

T: I really didn't feel that I needed a week because I really caught on to this pretty fast. I don't know I guess probably anything less than a week would be not enough so I guess a week.

I: How extensive has parent reaction been? You mentioned the one parent who tried to get his son into the program.

T: For the most part parents seem to like it. They are kind of amazed at some of the things that the kids are doing and they feel helpless because they don't understand the Minicomputer. But I think for the most part they like it and that was the reaction at the PTA meetings. They do though have some doubts about whether the kids will be able to do the problems on their own without the Minicomputer or without any crutch. They don't know how the kids are going to be able to do math without any crutch. But I think for the most part they like it.

## Interview 5 (continued)

I: Have there been any other presentations to the parents or community groups outside of the PTA meeting?

T: Yes. There was a presentation to the mother's club which meets in the afternoons during school time. I don't know, I think that went fairly well too. There was also a presentation at the spring SLSTA day for the different teachers from around the county and I guess that went fairly well. They didn't have too many people - too many participants, but I guess that went O.K. too.

I: Do you have any other comments you'd like to make that haven't been covered?

T: Just that I've noticed in the manual some of the pages it says to tear out a sheet or something and on the other side is printed the lesson for the next day. But that was no problem once I found out. I just went and got enough manuals. But I'm sure that you are redoing the manuals anyway aren't you? No I really can't think of anything right now.

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## Interview 6

I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?

T: Well, I haven't taught it for a year because I didn't have the materials. I started to teach it and the Minicomputers - the demonstration ones - never arrived. They arrived in January without the books. So during September and October I worked around the lessons, not dealing with the Minicomputer. Finally I decided I was not going to get them so I just drew them on the board, which worked very well. They came in January and I was not here in January. I had a substitute teacher. I gave her all my materials that I had gotten from the training session and so she continued in my steps. Well when I came back the Minicomputers arrived but no worksheets as I say. So then I found another teacher had discovered that there were no middle sections. In other words we have worksheets from 1-100. The sheets from 100-200 were missing. So she reported it. She was given a set. By the time I got to that particular set they had not sent the additional sheets. I requested more and reported it and they never did arrive. I suggested to the supervisor that I start with sheet 200. And he said, "No you could not work around it." so I just gave up and I've been photographing SRA sheets since.

I: Since when.

T: Well I came back in February and I had very little material. So I just stopped and I've been teaching other math. And I have boxes and boxes and boxes of paper materials.

I: How far did you get then?

T: Well I think it was 100. I don't know what the worksheet was. It's all down there somewhwer. I recorded it.

I: Well for the part of the program that you did use what did you think of the beginning part of it? Did you like it?

T: Well that was difficult too because there were only about five of my children who had had the first year program and when it said to spend 20 minutes on a lesson I would end up spending two or three hours, sometimes the entire afternoon on one little fact. And then I'd get a new student and the poor child would be just lost. I did have some parents help out to bring them up to date and I had some of the better students working with them.

I: What special things did you do for students who didn't have CSMP last year?

T: I just started from scratch. I taught first grade. Because they could not multiply or divide and when I'd hit it very quickly they were just lost and so I had to go back to basic adding and subtracting which threw me way off. But I didn't think it was fair to bound ahead with my five who could do it and leave my 15 others behind.

I: Were those kids starting to pick it up?

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## Interview 6 (continued)

- T: They seemed to enjoy it. I really liked the beginning part of the program. I liked it very much but then it got to be the same thing all the time and I don't like all the fun and games stuff. I really couldn't give the children anything except the workbooks because those things come around too often to do independently. I mean I was teaching that every day - the arrow bit and the bakery and I just didn't think that that repetition was that necessary. And then I got to the point where they were not learning to borrow and carry which is so important in second grade. And then I got very discouraged about the program.
- I: Generally how long is your math class now with the SRA?
- T: Mainly I have taught them to borrow and carry from the ten's and the hundred's and it's just basically they are doing work every day on their own, independently.
- I: How well do you think your students liked the first part of the year with CSMP as compared to the second half of the year with SRA?
- T: Well it's completely different. I like the art work and they like the Minicomputer but as I say I didn't get into the carrying and borrowing and I was very concerned about that. And I felt like I didn't know if they were ever going to give up the Minicomputer. So they can add and subtract and multiply and divide - so what. If you gave them a piece of paper they weren't able to do it. I also used the Addison-Wesley. I just photographed the worksheets.
- I: What do you think of the Minicomputer?
- T: It's fun I think as a pastime for the children.
- I: From the exposure you had was there any particular aspect about the program that you liked?
- T: I did enjoy working with the Minicomputer. I enjoyed that and the children liked it. It made them think and they learned. But on the same hand they could not do the problems without that computer which is what I was concerned about.
- I: What do you consider to be the worst aspects of the CSMP program?
- T: To begin with there is too much material - boxes and boxes of paper work. It's ridiculous. And when I started the workbooks I would have seven different levels. And grading seven different levels is impossible. I eventually had to put the name of a child with a roman numeral and have children take their workbooks to the person who finished first. I did not collect them as was suggested, I let them keep going. I started with the easy one and let them keep going. Some of mine would get all seven and some did three or four. But trying to grade everything was just near impossible. And I have to grade everything I give out. That's just the way I am.
- I: Any other worst aspects?

## Interview 6 (continued)

T: I got a little tired of the arrows. I liked the way they did the rationals. I thought that was very good and the art work accompanying that was good and the children were able to understand that very well. My sub did a unit on clocks which I don't know if you cover or not. I would like to see something done with metrics. And I would like to see a different way of subtraction. I don't think any of the math programs I have had really treat it well. And the children have a difficult time learning combinations the way they are taught to borrow and so forth.

I: How does CSMP compare with other programs?

T: I think with the other programs you teach a certain aspect and then you let the children go on their own more, where here you are in front of them every day for a long period of time. And they work very little on their own. And I just don't think most second grade teachers can afford to spend that much time on math because reading is predominant. And that's done twice a day for sure. But as I say I did have to spend hours on some of it.

I: That was in trying to catch up most of the students who didn't have the program in the first grade?

T: Right and also I didn't have the Minicomputer so I did my own.

I: Did your perception of the program change at all from the time you started it to the time you ended it?

T: It was a matter of you had to study every day in order to teach it.

I: Do you think the orientation and training you received in the summer was adequate?

T: The training that they gave us in the summer was purely theoretical math. We never saw what we were going to teach. I felt if they had gone over what we were going to teach it would have been worthwhile.

I: What do you think would be a minimum preparation a second grade teacher would need to successfully teach CSMP?

T: I think they should start her back with a first grade program. As I say you have to study every day to teach it. And I don't think the modern theories are going to help.

I: Do you have any other comments?

T: I do not like to see children just sit at their desk and have you present something. So many times, and I've noticed in other classrooms, you are teaching something and they have nothing to do and they get very restless and so I was at the point where I would give them a piece of paper and have them do everything I was doing. They were all over and sprawled around. Even when I was going to present a worksheet at the end I would give them a



## Interview 6 (continued)

a plain sheet to do what I was doing and then they would get the worksheet. As I say, the kids liked it. It was enjoyable for me to teach at the beginning when the Minicomputer was new to me and I frankly enjoyed doing it with them but there are so many games every day. I mean how many times can you shake two red marbles and a blue marble and come up with that theory. It gets a little old.

I: Would you like to see different kinds of games or just phase them out?

T: I'm not a game person. I think there are too many games now.

I: You didn't really get a chance to try this out but how appropriate do you think the spiral approach is for the slow children?

T: In my classroom I felt so sorry for my slower ones and the ones who hadn't had it because if we'd go over something "I don't get it." and then you are supposed to say "Don't worry we're going to touch on it again." And then the slow kids just sit there. I don't like the theory of teaching a little bit and then hitting it again and again. I like to thoroughly teach it and then have them practice the skills, whereas they don't do that in this program. You keep going back to it but maybe that's the repetition I don't like. Always hitting it a little bit but never really teaching it.

I: What would the students reaction be if we gave them a Minicomputer now?

T: They'd like it.

I: You didn't get into any borrowing or carrying but do you think most of them can do the basic plays fairly well?

T: Oh they can borrow and carry now.

I: With the Minicomputer?

T: We did one's, ten's, hundred's - but I understand it's called a big play or something.

I: Special play.

T: Well they can do it on the Minicomputer. But they couldn't do it when I gave them a sheet without the minicomputer. And I want to tell you one other thing. In your instructions it says do not stress the one's computer more than the - in other words, they can work from right to left and left to right. That's a bad thing when they get to a sheet of paper because they start from the left and work to the right. You can do that with the Minicomputer and it doesn't make any difference, they'll always end up with an answer but you can't do that on a sheet. Oh no, they can borrow and carry and add and subtract and everything on that. But see there wasn't enough. That great big sheet of paper and maybe 12 little problems and it would be over. I just think you need more drill work, you need more combination drills. I had to do a lot of combination work on the board on my own. And the arrows I don't think helped that much in using the combinations.



Interview 6 (continued)

I: Did the arrows pose a particular problem for the kids?

T: No they'd just count on the number line or something.

I: Do you have anything else to add?

T: No.

## Interview 7

I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?

T: I think it is very good and I think that the children who are average and above average thoroughly enjoy it and they have gotten much from it. But I really feel that the children who are at the lower end are very much confused at times and aren't really picking up any of the things that we are doing. Now I don't know if those children would be confused with another program or not. But some of the things that they were to have learned in the first grade they didn't pick up there which made it harder in the second grade program for them to move on. Now those children haven't had as much trouble as children who have come in the middle of the year. Those children had a great deal of trouble picking up this whole concept. And the Minicomputer was almost impossible for them and I didn't even attempt to teach it after a while when I saw that they weren't getting it. Now these are slow children and there again that could very well be the reason for the difficulty.

I: Now, you said that the average children and above average children really like it. What aspects of the program do you think that they liked the most? What turned them on to the program?

T: That's something I'd like to know myself. I don't know really. At the very beginning of the school year I said it's time for math they were ready to go. I don't know what it is really. They liked the Minicomputer, to them that was fascinating.

I: In what ways did your perceptions of the program change throughout the year since the beginning when you first started teaching the program? Has it changed at all?

T: Well I guess I kind of see it more as the whole thing. Perhaps at the beginning I should have gone through and looked through it but that was a tremendous task which I didn't have time for. But I kind of see the whole thing now as a whole, rather than step by step, lesson by lesson which should make it much better for me next year.

I: How does CSMP compare with other second grade math programs that you have taught?

T: Certainly the children were ahead when they came to my class. They were further ahead in their understandings I think than they would have been coming from just the math that we taught last year, and things that they can do but I think a lot of it they did on the Minicomputer, larger numbers and that sort of thing. I did find that they were behind in the subtraction.

I: Coming into your program or this year?

T: Leaving the program, this year at the end of the second grade. The special backward play was introduced very late. And somehow I thought that was important to learn in second grade. Maybe I made the mistake. But I skipped over to that portion of the lessons and I taught it very thoroughly so that the children when they leave me will be able to understand and I don't think they would have if I just continued along as the lessons were written. Now maybe I made a mistake but I did it that way.

## Interview 7 (continued)

I: Are there any other differences between this program and the other second grade math programs that you have taught? You mentioned subtraction. Anything else?

T: Certainly the multiplying and dividing part of it came much earlier and dealing with fractions, all of that comes much earlier than in other second grade programs.

I: What are the best aspects of the CSMP program?

T: Well I think really that the children do understand what they are doing possibly better than in the other math programs. They really understand what is happening better. The addition and multiplication are really connected. I guess because it's taught that way from the first grade on through. It's just not introduced as now we are going to multiply, children and when it is introduced from the very beginning they see it gradually as they go along.

I: What would be some of the worst aspects of the CSMP program?

T: Well the thing that I really didn't like and maybe I didn't like it with the slow children was the spiral approach. A lesson is introduced and then not touched again for a week. I think the slow child really needs more repetition at the time it is introduced. This is what I found. And then I would have to take a slow group and really work on that idea or it would be totally foreign the next time it was introduced to them. I would say maybe a little more on that one thing before you leave it and move on to something else for some children. Now it didn't present a problem for the faster children at all.

I: Do you think this program is appropriate for slow students?

T: I don't know. They're the ones I have had problems with but then again I might have had problems with them in other math. There is one more thing I'd like to say and I've done a lot of extra of this on my own and that is actually learning addition and subtraction combinations but then again I am old-fashioned and I think they are important.

I: Did you give any other special type of help to those kids?

T: Yes.

I: What did you do?

T: Well when I saw they really didn't understand this special backward play I used some other material that I have used with other children in other classes to show them place value and what happens and I must admit that didn't go over either, I used a combination of things.

I: How long does your math class usually last?

T: Oh about 40 minutes.

I: How does this compare with the time you spent with other math programs?

T: About the same.

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## Interview 7 (continued)

I: Was the suggested time in the manual reasonable?

T: Yes.

I: Were there any cases where you thought they weren't reasonable?

T: Not often.

I: Let's talk about the sequence of lessons. You have mentioned that you had repeated certain lessons. What were they? Not specific lessons but just general topics.

T: I have to think about this. It's kind of hard to remember. I think with some children place value was very confusing and I wanted to straighten that out. I think with some children the addition, making the special forward play was confusing. I have to work on that in addition to the time that was given.

I: Were there any lessons that you repeated with the entire class?

T: Let me see. Yes. The multiplying 2X and the inverse operation with the entire class.

I: You mentioned use of supplementary material with place value and with subtraction. Did you use any other supplementary material?

T: I used a lot of games to help the children with their combinations, I made extra worksheets or something that needed extra help, in building roads. Some children had difficulty with that.

I: You had mentioned that you had changed the order of the sequence in order to teach subtraction. Did you follow the lessons in the program when you taught subtraction?

T: Oh yes. I did. I just skipped all the lessons in between. But there were very few of them. I don't think they really intended the children to learn subtraction in the second grade.

I: Did you find it a problem to keep track of the program materials?

T: Not really. I stored them in the closet and it worked out fairly easy for me.

I: How did you assign the workbooks to the students?

T: I guess I had a group of about 6 or 7 children who were very slow and they always started on the R books and the rest of the class started on the average books and worked on from there.

I: Do you keep track of their scores?

T: Well I'm not sure I did it correctly because I never really talked to anyone about it but after the children worked a lesson I scored them and for every mistake they had to go back and correct it, so when they took it home it was correct. I don't know how it was intended to be done. I didn't really want to send anything home that was incorrect and I wanted to be sure that the child understood it before we went on to anything else.

## Interview 7 (continued)

I: Was there enough information from the workbooks, the worksheets and class activities to decide when a student needed individual help?

T: Yes. I think so.

I: Do you think there is a need for testing materials to be incorporated into the program?

T: I don't know. I think maybe the workbook is a pretty good evaluation?

I: What type of students don't like the program?

T: Well I don't know that there is any type that doesn't like it. I couldn't say they don't like it. There's certainly good attention during math class and perhaps they are getting more than I think they are.

I: What are the students' reactions to the Minicomputer now?

T: Well actually many of the students haven't been using it, they don't really need it. The students who do need it still aren't very sure how to go about the operation. If they have a problem to work where they're multiplying and they've actually put the markers on the drawing for them and I tell them use the Minicomputer now to figure this out, like  $2 \times 23$ , they put it on but then they don't know what to do without help. But if I said to them "Now let's make some plays." they'd say "Oh yes," but they can't just do it independently. When there is a problem on the Minicomputer they want some help.

I: Do most of the students use the Minicomputer fairly well?

I: I think so.

I: What do you think of the Minicomputer?

T: I think it's fascinating. I couldn't believe it when I saw it.

I: What special things did you do for the students who entered the program at the beginning of the second grade?

T: Before our materials arrived, and they were late, we really just practiced on the Minicomputer because I was learning it myself and there were three children who came then that had not been in the program last year and they picked this whole thing up very quickly. They were not the ones who had the problem with the program. They were the children who came in later.

I: What special kinds of things did you do for those children?

T: I tried to help them to learn the Minicomputer and one little girl I think finally has it now. The other little girl never did understand at all, and the little boy who came in after her was terribly confused. They are very low students and I finally gave it up completely because they weren't getting it. And it was too much time given to it and they didn't understand it so I dropped it with them.

I: What about arrow diagrams? Did you have any problems with them?

## Interview 7 (continued)

T: That was easier. That they did pick up.

I: Should more attention be paid to the problem of new students in the teacher's guide?

T: Maybe so. Could be. I just did what I thought and maybe I didn't take all the right steps. But I tried myself with the children and had other children try to help them and that's about as far as I went with it. I don't know if there were some other things that could have been done. It just seemed to me that those children didn't understand it and it was time wasted for them and everybody else.

I: What do you think would be helpful for the writers to include in the program?

T: I don't know.

I: What type of special help did you give to slower students?

T: Well sometimes I just took a small group of children that were having some particular problem and go over a lesson with them or try another approach, ~~something I have used before like with place value. Take that group and work~~ with that idea for a while and see if that helps. With some it did and with some it didn't and then maybe I'll go back to CEMREL's method and try it again and some children will pick it up. Suddenly they saw it. I mostly worked with small groups that were having problems in some particular area.

I: Do you think the orientation and training you received was satisfactory for you?

T: Yes.

I: What about a teacher training program? What would be the minimum teacher training a person would need?

T: Oh I don't know.

I: How long was your training program?

T: Five days.

I: Was that too long, too short?

T: I don't know. I don't know if all that indepth background that we got was necessary. Maybe it was. Maybe I wouldn't have done as well with this as I've done. I don't think all the homework we got was necessary.

I: How extensive have parent reactions been?

T: This year I haven't heard too much from parents on it. Some of the parents at conference time were interested in knowing if the children were going on with the program. But there were very few parents that mentioned the program at all.

## Interview 7 (continued)

I: Did the parents want the children to continue in the program?

T: Yes.

I: Have there been any presentations about the math program for the parents?

T: No.

I: Are there any other comments you would like to make concerning the program?

T: I've enjoyed it very much, teaching it this way rather than the way I have been teaching it. I really enjoyed seeing the enthusiasm of the children and the feeling that I have is that they really understand what is happening and when they can come up with a way of doing something before I've even presented it, then I know they are really thinking. On several lessons they were way ahead of me and I almost felt I didn't need to present the lesson at all for the majority. The ones that really bothered me are the slow ones. There have always been the slow ones at the other end I suppose.

## Interview 8

I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?

T: I like it but I found that it didn't meet the needs of the slow students. There wasn't repetition for them, there wasn't enough work on basic number facts, they were frustrated by the pace of the program. I also found that with one top student I had difficulty keeping up with him. His pace was much faster than the rest of the group. He was eager to go on. Even the workbooks weren't able to meet his needs and I had to work ahead in the workbooks to keep up with him. That's enough for that. We'll come back to that.

I: Were there any ways that you found that your perceptions of the program changed over the course of the year?

T: No.

I: What type of special help did you give to slower students?

T: We worked individually, as the rest of the group worked on a worksheet or something, I would take time to go over with them and repeat a lesson, going much more slowly and in more depth. They also had basic study sheets of their own. I mimeographed things with just basic number facts, addition, subtraction, borrowing, carrying and most of it was just teacher-made materials. I didn't use another system or anything but primarily dittos, counters, counting sticks, things like that, manipulatives.

I: Did you use very many supplementary materials with the rest of the class?

T: No. No I didn't. Except as I said flash cards.

I: Do you think this program is as appropriate for slower students as other programs?

T: No. As I said before I think it's frustrating for them, the pace is awfully fast, they don't get enough repetition of the skill. They need a lot of practice on addition facts, subtraction facts, that they aren't necessarily able to get with the program. And I think some of the concepts are good and the fact that the concepts are put down so concretely but they are often too far ahead for my students. I felt that the pace was just too quick for them.

I: What do you think are the best aspects of CSMP?

T: I think the concrete approach is really neat. And some of the ideas like the multiplication and things I think are marvelous and I don't know if it's legal but I've shared it with some of the upper grades. You know the ones that are saying, "My kids don't know fractions, they can't figure it out." And you go, "Oh neat, I've got this terrific idea." So I think that's really marvelous and I think the minicomputer is good. I've noticed that in second grade you get away from it more. It's not used quite as much as in first grade but I think that's kind of an exciting part of the program. I think the manipulatives that the program has are good. They are often a hassle to pass out, like the marble shakers and things like that but it's worth the effort because I think it's good for the kids to work with it in that way and it's nice too that they are able to go and experience the things on their own and then continue to build on the skills.



## Interview 8 (continued)

I: What do you think are the worst aspects?

T: Well I'm kind of hung up on this with the slow students and I really feel like they're lost and even some of the lower average students get frustrated by the program because they don't feel like they're keeping up or they have trouble keeping up and then they feel like they've failed. Whereas, they may be building their skills but I don't think they feel comfortable with it. And also the lack of basic number skills, the quick number facts. Even parents have come to me and say that they've noticed that their child just doesn't know the facts as quickly as he should at the end of second grade, like  $2 \times 2$  is 4. They stress counting on fingers and all that kind of stuff and these kids are really finger-counters. We play number champ and you should see the fingers fly. I'm not saying that's bad but I do think that they have to be weaned away from that and be able to respond to simple addition problems more quickly. So that was another thing I felt concerned about.

I: How does CSMP compare with other second grade math programs?

T: The only other one I have used is Addison-Wesley and I think it's a lot more exciting for the average and high-average. I think it opens a lot more doors to them. ~~I think they are able to experience a lot more in math than they~~ were before. I mean the Addison-Wesley program just doesn't hit on a lot of the things that CEMREL spends time on. So I think that's part of it. Also as we said before I think the Addison-Wesley spends a lot more time on unit things and then you spend the time on addition or subtraction or whatever and then work on that and then when that's finished you go on to something else, whereas CEMREL is more of a spiral.

I: About how long is math class every day?

T: Fifty minutes.

I: How does this compare with class time usually spent?

T: It's approximately the same. I'd say 40-45 minutes normally.

I: Were the suggested times in the manual reasonable?

T: Most always. Yes.

I: Did you repeat certain lessons?

T: Yes.

I: Very many?

T: No. I'd say maybe three or four throughout the year.

I: Did you have to change the order of the lessons?

T: Yes. If I needed more time or if we had another engagement or something I would choose a lesson just a few days ahead that would fit into the time slot better, but usually I followed the schedule.

I: Did you use supplementary materials? 1.

## Interview 8 (continued)

- T: Yes. Especially for the slow children. Teacher-made materials, dittos, counters, and things like that.
- I: Did you find it was a problem to keep track of program materials, the workbooks, worksheets and - ?
- T: Yes, that takes an awful lot of room. I have one whole cabinet that that's all it's for. This cabinet unfortunately doesn't have doors and a lot of my materials are now gone, out into the hands of the children. They were hard to keep hold of, yes.
- I: How did you assign the workbooks to the students?
- T: Well originally I just made my own judgement and from then on I would see how they progressed in the workbooks before and then for the next workbook I sort of picked from there and for the most part it was just my opinion, subjective.
- I: Did you keep track of their scores in the workbook?
- T: If they really bombed out on one I'd mark that but for the most part they worked ~~successfully through the workbooks. They also corrected any mistakes that they~~ had made in the workbooks.
- I: Was there enough information in the workbooks, worksheets, and classroom activities to help you decide when a student needed individual help?
- T: Yes though, I didn't necessarily pick up so much from the worksheets as I did just from them. There weren't always worksheets with the lesson. So you had to make your opinion. You could tell the ones that were frustrated or the ones that weren't responding and so quite often it was just a subjective opinion. If I saw that they had really bombed out on a workbook or a worksheet then I would give them individual help but that wasn't my primary reason. I didn't rely on those strictly.
- I: Do you think there is a need for testing materials for the teacher to evaluate the student to be incorporated into the program?
- T: I think primarily the workbooks are testing. You can pick up from there.
- I: How well do you think your students like CSMP compared to the other math programs?
- T: I can't make a general statement. I know some children that just love it and those are the average students, the ones that have really met success here and are excited about learning new skills. But the lower students I would say might feel more comfortable in another program.
- I: What doesn't appeal to the slower students? What part of the program?
- T: Well I think like I said before the pace is hard to keep up with. I don't think they feel success all the time. That's not stressed, I realize that, but yet they don't feel comfortable with the pace or the organization. But I would say on the whole the average and high-average children really enjoy it.

## Interview 8 (continued)

I: What is the students' reaction to the Minicomputer now at the end of the year?

T: They didn't have much use for it. They didn't seem to be too interested in it. In fact it was like oh do we have to do that again, they felt burdened by it and it was not fun any more.

I: Can most of the students use the Minicomputer fairly well?

T: Yes. Except we hadn't used it for a while and we came back to it and it took a little while to get back into the swing of it again. I did notice that after not using it but they picked up on it quickly so I think with a little review they can use it adequately.

I: What do you think of the Minicomputer?

T: Oh I think it's neat. I was really excited about it at the beginning of the year. I think it's a neat idea.

I: What special things did you have to do for the students who entered the program at the beginning of second grade, who didn't have CSMP in the first grade?

T: I had two new students. We taught them the Minicomputer. The Minicomputer primarily was the only thing we spent time on because the rest of the lessons they picked up on after that. At the beginning it was a bit of review anyway so the Minicomputer was the only area that they really needed extra help on. But during the year there weren't any new students. I was very lucky.

I: Do you think more attention should be paid to this problem of new students in the teacher's guide?

T: See that's not fair, I really wouldn't know.

I: How extensive has parent reaction been?

T: It's O.K. I have a few very verbal parents and luckily the ones that are very verbal have been positive and they are primarily the parents of the top students. They are excited about the program and they feel their son or daughter has been able to really expand their mathematical whatever. But they have told me that there are other parents who are disappointed in the program. We had a big parent conference and showed some of the ideas so they had been orientated to it but I think when the students went home and felt this frustration or were not as adept at number facts or whatever, they were a little leery about it. But that was second hand information. The only first hand information I've gotten is from the excited, eager parents.

I: Do you think the orientation and training you received was satisfactory?

T: Oh yes.

I: What do you think is the minimum preparation for a second grade teacher to successfully teach CSMP?

T: You mean before you start teaching?

## Interview 8 (continued)

I: Yes.

T: Well we spent a week.

I: Do you think that was too much?

T: No I didn't think that was too much and it was an exciting week. Everyone was eager to try new things. Surprisingly the week went very fast. I thought it was plenty, I mean I wouldn't necessarily suggest any more than that. That was enough.

I: Do you have any other comments you'd like to make?

T: No. I think I have had a chance to voice my opinion already.

## Interview 9

I: Now that you have taught the program for approximately two years what is your general impression of it?

T: I think it's a marvelous program for average and above students. I see that next year they are coming out with things for the lower students and I think that's very badly needed. I don't think it's for every child.

I: Can you think of any other programs that would be more appropriate for slower children? Or is this just like the other programs in that respect?

T: Pretty much, yes.

I: How appropriate is the spiral approach for the slower children?

T: I like that particular approach for the slower children. They seem to be so easily bored with anything and this doesn't force them to drill on anything for too long. They hit on it, work on it, stop, come back to it later on. That much I like. I just think it needs to be modified somehow to deal with all of the kids in a particular classroom.

I: What type of special help do you give the slower students?

T: I either pair them up with one of the brighter kids, sometimes keep them in from recesses to work, give them extra work for homework, if I don't feel it's going to turn them off too much. If they are still inquisitive enough to want to know and just can't get it this is what I do.

I: In what ways if any did you find your perception of the program changing over the last two years? Since you first started the program?

T: No it really hasn't changed all that much. I thought last year the program was for every child and this year I don't feel that it is, at this point. Now next year with the new things coming out I may feel differently again.

I: How does CSMP compare with other second grade math programs?

T: The only other one we have used has been the Addison-Wesley which is pretty much a book approach, which I don't care for anyway. I like the manipulatives in this program. I think that's really important.

I: Are there any other differences between this program and the others?

T: It's not a book oriented program. It seemed that the Addison-Wesley program didn't go in a spiraling effect. They kind of hit and missed this there and hit and missed that there. I can see a pattern with CSMP that I think is very important for the children. Those are the two main things I think.

I: What do you think are the best aspects of the program?

T: The manipulatives, the stories, getting the kids involved.

I: What are the worst aspects?

T: I think probably that everybody is doing the same thing at the same time except for the workbook series. They are all together, doing the same thing which of course they say will be remedied next year so I'm not too concerned with that.

## Interview 9 (continued)

I: How long is your math class every day?

T: It is an hour and 20 minutes but we only use 40-50 minutes for math.

I: How does this compare with time usually spent in teaching math in other programs?

T: In my third grade class I spend 40 minutes at a time. I think this is just about right on par.

I: Were the suggested times in the manual reasonable for the lessons?

T: Give or take five minutes. Usually they were pretty good, yes.

I: Any specific lessons you can recall where the times were unreasonable?

T: Most of the Minicomputer lessons I thought were too short. They should have been a little bit longer. Those are the ones that stick in my mind because I remember looking at the clock thinking, "Oh I should be through with the lesson."

I: Let's talk about the sequence of lessons. Did you repeat certain lessons to the class as a whole?

T: Yes I did. Do you want me to recall the ones?

I: Any particular ones that you can recall right off hand?

T: I can't. I would have to look at my sheets. I sent them in to our coordinator. No more than about five or six through the whole year that I really repeated though and usually it was because that particular day they weren't tuned in and just weren't getting it so I just repeated it the day after. And I shoved everything back.

I: Did you change the order of the lessons?

T: No I didn't. I figured they were there for a reason.

I: Did you use any supplementary material?

T: Yes. I used some teacher-made worksheets. I used some other things that I pulled out of other series to supplement the fractions  $\frac{1}{2}$ ,  $\frac{1}{4}$ . I used some television, if I could find something on that had something to do with math.

I: Did you find it was a problem keeping track of the program materials, the workbooks and the worksheets?

T: No. For the worksheets I went through and took them all out of the cellophane and put them in file folders and put those in a drawer. A good way to do it. I left the workbooks in cellophane so there wasn't any problem with that. No I don't think it is a problem at all.

## Interview 9 (continued)

I: How did you assign workbooks to students?

T: To start out with I guessed about where they were and then I went from there judging, seeing what they were doing. I went from there.

I: Did you keep track of their scores in the workbooks?

T: Generally. In the primary down here we're on a plus, check and a minus program. So when I gave out the workbooks I checked it off on the sheet provided and then went back when I checked them and took an overall score from the whole thing. If they did a darn good job I gave them a plus, an average was a check. So that they would either have a check-plus, check-check, or check-minus depending on how they did.

I: This was on the entire workbook?

T: This was on the entire workbook. Right.

I: Was there enough information from the workbooks and the worksheets and the class activities in general to help you decide when a student needed individual help?

T: You could usually tell by their performance.

I: From the workbooks and worksheets?

T: A lot of times just from their questions and answers too. You could tell right away when they started asking questions.

I: Do you think there is a need for testing materials to be incorporated into the program for teacher evaluation of the students?

T: Isn't that the purpose of the workbooks? Now what I did then was go through and I made a list of things like arrows and Minicomputer with a list of all the children's names and then periodically I would check off and see how they were doing on that. That's how I evaluate it.

I: Do you think the program should incorporate some - ?

T: They could but it's not necessary. We do this for every type of text. I don't know why. It would be easier, sure. But I don't really think it is necessary.

I: How well do you think your students like CSMP as compared with other math programs?

T: You know it's very hard to answer that. We've had a lot of problems with that particular group of children this year. We've got some hard core emotional problems and things like this. And I'd say on the whole, the average and above kids like it real well.

I: What appeals to these average and above average students?

T: One of the things is that they were doing things in first grade that some of the kids didn't get to until third grade. They liked that. They like the manipulatives, they like being able to work with negative numbers and they like the workbooks.

## Interview 9 (continued)

I: What type of students don't like the program?

T: The slower students are not crazy about it.

I: Why?

T: Because I think they see what the other kids are doing with it and they just can't grasp it that fast, and it makes them kind of hyper about it, well if I can't get it like so and so then I'm not going to try. So I'm going to cause problems. This is happening in that particular group anyway.

I: How do the children like the Minicomputer now?

T: They don't want to be bothered with it. They'd rather try to do it without. Of course they can't do things like decimals without it. But they're not really even interested in doing that particularly with the Minicomputer, "Isn't there a different way to do it?" they say.

I: Can most of the students use the Minicomputer fairly well?

T: Not in that group.

I: What do you think of the Minicomputer?

T: I think it's fantastic, but of course I've been through how many years of college.

I: What special things did you have to do for the students who entered the program at the beginning of the second grade, those students who didn't have CSMP in the first grade?

T: There weren't any. The only new students we got came about half way through the year this year.

I: What did you do for them?

T: I worked with them after school, before school, during recesses, I had them work with a brighter child, I had parent conferences and explained to the parents how we use these materials, and that was just about all I could do for them.

I: How well did it work?

T: With one child it worked very well and with another one he wants no part of it.

I: Did any special areas cause any specific problems like the Minicomputer or arrow diagrams?

T: Yes the Minicomputer. They seemed to like the arrow diagrams pretty well. But they just didn't really turn to the Minicomputer. Of course they were so far behind the others in understanding it that they kind of got that attitude that "I can't do it, I'll try it another way." And this is what they did.



## Interview 9 (continued)

I: Do you think more attention should be paid to this problem of entering students in the teacher's guide?

T: It would be really helpful. Yes.

I: What would be most helpful to you?

T: If I were to change something about it for entering students? I really think that if they come out with this new teacher's guide for remediation, I think that will take care of the problem because we can use that quite a bit.

I: How does the second grade program compare with the first grade program?

T: About the same.

I: Have you found that some of the students who couldn't get the elementary concepts in the first grade are finally getting them in the second grade?

T: No. They are still having the same kind of problems they were having last year.

I: How extensive has parent reaction been?

T: I had a study group for them at the beginning of the year to introduce them to the materials we were using and every parent that I've talked with liked it. Of course now the parents that came were the ones with the average and above students.

I: Have you had any negative comments from any of the parents?

T: No I haven't.

I: Were there any other presentations about the math program for the parents or community groups outside of your study group?

T: I don't think so.

## Interview 10

I: Now that you have taught CSMP for nearly a year what is your general impression of it?

T: I really like it. This is my first year of teaching second grade so I'm not that familiar with a traditional second grade math program. But I can tell you the things I liked about it and the things I didn't like. One thing I liked is the variety and the presentations. So many of the lessons are presented in a game-type format, where we said "O.K. today we're going to play a game of Max's Z-spinner" and the kids thought that was really neat, or when we talked about Roy Rabbit hopping on the number line or Mr. Booker's Bakery, they loved that. They didn't get bored with sitting there doing page after page of math problems. But what I didn't like about it, having the slower students, was the frequency with which things jumped around. When you would introduce the special forward plays and you'd work at it and you'd think the children had it and then you wouldn't hit that lesson again for a week and a half, as soon as we would come back to it I would have maybe one student who would remember what a special play was and the rest of them would forget and I would spend almost the whole period reviewing and wouldn't get to that lesson then till the following day. So even though I like the variety, sometimes I wished they would stick with something for a longer period of time so that the children wouldn't forget it.

I: In what ways did you find your perception of the program changing during the course of the year?

T: Well I came into it late to begin with so at first I was really confused. But otherwise I just really like it. I think more and more, the more I got into it.

I: Do you think you can make any comparison between CSMP and other second grade programs?

T: I can't because I don't know anything about any other second grade material.

I: What would you say would be the best aspect of CSMP?

T: I think the high interest. I really think that's it.

I: And the worst aspect would be - ?

T: With the slower students, the jumping around. Especially when we come across a workbook day and maybe we hadn't had a certain thing for a while and in their workbook they would come across that page and they would forget how to do it and I'd have to review with them before they could do that page.

I: What type of special help did you give to the slow students?

T: A lot of review, that's about all.

I: Individually or with a group?

T: With a small group, usually when we would do a workbook page I would find three or four people who were not doing, let's say negative numbers the right way,

## Interview 10 (continued)

then I would pull them out and work with them on negative numbers. I guess really based on their workbook pages is how I chose what groups would work on what skills.

I: How did you assign the workbooks to your students?

T: The first series that came up when I was here I just gave everybody the number 1 book and then when they were finished with that they would go on to the second book and they got to the point after Christmas that some of them, you'd give them that number 1 book and in five minutes they would be finished with it. So then I kept a record of how many workbooks they finished and then based on the previous level instead of giving them number 2 or number 1 I would start them either on number 2 or number 3. And they always had to get a workbook 100% right. If they missed a page they would have to re-do it before that workbook would be considered finished.

I: Was there enough information from the workbooks and the worksheets and class activities to help you decide when a student needed individual help.

T: I think so, yes.

I: Do you think there is a need for testing material to be incorporated into the program?

T: I don't think so. I used the workbooks as a test because they covered everything that had been taught. The only thing is you always do have the chance of copying when they do their workbook. Even though I tell them to work independently and I try and watch them when someone comes up for me to check a page or has a question then my eyes are not on the room. And they could copy so it might not be a true test of how well they know the material.

I: Do you think this program is as appropriate for slow students as other programs?

T: Oh, I think so because of the interest.

I: How appropriate do you think is the spiral approach for the slower students?

T: That's what I don't like about it. Although it holds their interest. I'm really mixed up about that because if you would work with negative numbers one day and the next day and the next day and the next day they just might get tired of that. So I think maybe a slower spiral might be better.

I: About how long is your math class every day?

T: An hour.

I: How does this compare with time usually spent in math in other programs?

T: It would be exactly the same.

I: Were the suggested times in the manual reasonable?

## Interview 10 (continued)

T: Pretty close. Yes. The manual would usually say a 35 minute lesson and a 20 minute lesson or maybe a 30 minute and a 15 minute. It would end up being a little bit short of an hour and I would end up using every bit of my hour.

I: Did you have to repeat certain lessons?

T: Well in the form of review I would but not actually the whole, entire lesson.

I: Did you find that you had changed the order of the lessons?

T: I didn't. I just followed the manual as it was presented.

I: Did you use very many supplementary materials?

T: None really.

I: Did you find it was a problem to keep track of the program materials, the workbooks and the worksheets?

T: No. I just kept them in my file.

I: How well do you think your students like CSMP compared to other math programs?

T: I think they liked it much better.

I: Were there any types of students who liked this program better?

T: I don't think so. One thing that I have noticed, on the days that you've come to test, we count that as our math period and then we just have our reading during our math time. And when the kids find out that they are not having math they groan and moan and they say "Oh gee. We want to have math." So I think that they really like it. I don't hear them complaining if I say "We're not going to have English today." But I think they really do enjoy it.

I: Are there any types of students who don't like it?

T: I think there are students who just don't like school period and don't like work, but I don't think it would be just the program that they don't like.

I: What are the students' reactions to the Minicomputer now?

T: Now they think it's neat if they can work a problem and they don't have to use the Minicomputer. I had two students who all along said that they knew how to figure it out without the Minicomputer. The others would ask if they had to use the Minicomputer on a certain page and I would tell them yes because I knew that they didn't know. But now since I know that they are going into a regular program next year we've started not using the Minicomputer. For four weeks they have not used the Minicomputer. And they are learning how to do special forward and backward plays without the Minicomputer. I don't know if I really can say what their reaction to that is.

I: Will they ever take out the Minicomputer to help them with a problem on their own?

## Interview 10 (continued)

T: Well we're trying to get them not to because the third grade teachers will not let them use them next year I'm sure.

I: Can most of the students use the Minicomputer fairly well?

T: If I stand up there and say, "Today we are going to do addition and this is how we do it" and review with them five or six plays and then if all they have to do is addition they can do it. But if they are given a workbook where one page is addition and the next page is multiplication they'll completely forget. Now these are the slow kids though. They can't make those transitions. They forget the processes used.

I: What do you think of the Minicomputer?

T: I think it's fantastic. I'm all for it. I don't think that there are very many second graders who could add positive and negative numbers. And these kids can. I don't think there are many second grade kids who can add three and four 3-digit numbers. So it seems to me a very accelerated program brought down to their level.

I: What special things did you do for the students who entered the program at the beginning of the year and who hadn't had the program in the first grade?

T: I wasn't here then so I don't know and I haven't had any new students since then. I don't know what I would have done.

I: What was your orientation and training for this program?

T: None. Because I came late. The girl who was here before gave me some material that she had received at a workshop that she had attended and I looked through it. It really didn't help me much. I thought the manual was very explicit. I really didn't have a hard time following most of it. When I did I would run to either the other second grade teacher or one of the first grade teachers and say what is a cuisenaire rod. When I saw that in my manual I thought what is it? So I got help that way but otherwise the manual was very explicit.

I: What do you think the minimum preparation a second grade teacher would need to successfully teach CSMP? Do you think a workshop would have helped you?

T: Yes I think so. Just to acquaint me with the materials and to let me know what the rods were and what they were used for and otherwise I thought the manual was very well written.

I: How extensive has parent reaction been?

T: I really haven't gotten any reaction. They haven't said anything. But then I haven't had a parent-teacher conference either since I came. So I might have gotten a reaction then. I'm sure if it would have been unfavorable I would have received letters.

I: Have there been any presentations about the math program for the parents?

T: There might have been before I came but there sure haven't been any since.

I: Do you have any other comments you'd like to make about the program?

T: No.

## Interview 11

I: Now that you have taught CSMP for nearly a year what is your general impression of it?

T: I would say for the most part I have been very happy with it. I feel the children have a good understanding of the facts. Possibly a better understanding of what they are doing.

I: Did you find your perceptions of the program changing during the course of the year?

T: Somewhat. I guess I would have to say that I was a little confused with the sequencing. I found that it was difficult at times for me to follow the lesson plans as they were. I felt there was too much board work at certain times and not enough actual doing it, maybe in a workbook type situation or a worksheet. I found this true more so in the beginning of the year. Now at the end of the year I feel different. There's a lot more reinforcement I feel.

I: Did you have to repeat certain lessons?

T: Yes, however, not many. As I recall the lesson I had to repeat more than anything else was the forward special play.

I: Did you change the order of the sequence very much?

T: I didn't at the beginning because I didn't feel that secure myself. However, toward the end I hav

I: Did you use very many supplementary materials?

T: No. About the only think I supplemented was time. I did go ahead and teach time to my children.

I: How does CSMP compare with other second grade math programs?

T: Well I think it's very comparable.

I: What do you think are the main differences in this program and others?

T: Well of course I would have to say it's the approach you take.

I: What would you say would be the best aspects of CSMP?

T: I think they do meet individual differences very well. There's something that all of the children can do. This is true especially in the workbooks. So I do feel that they are meeting individual needs.

I: What about the worst aspects?

T: I found it difficult to hold my class's attention for 45 minutes at a time which was true a lot of the times we did board work. Now I have had a difficult class. I guess it's a rather unusual class. But if I were doing it again I know that I would do things a little differently in that respect.

Interview 11 (continued)

I: Like what?

T: I feel confident enough now that I could skip lessons and bring in some other lessons. But I just feel that I would like to have maybe half an hour at the board with the group but I still like that half hour for each child to be working on something. Then I really know whether he is getting it or not.

I: How long is your math class?

T: An hour.

I: How does this compare with time usually spent in math in other programs?

T: It's the same.

I: Were the suggested times in the manual reasonable?

T: Yes I think so.

I: Did you find it was a problem to keep track of program materials?

T: Not really. I had a folder for each child and we kept everything in a folder in an envelope.

I: How did you assign the workbooks to the students?

T: I had about 7 children that I would start out on R2. However, most of my class is fairly fast. So most of them I started out with a three or a four.

I: Did you keep track of their scores in the workbooks.

T: Yes.

I: All the problems or just the specially marked pages?

T: Right. Just those pages mostly.

I: Was there enough information from the workbooks, worksheets, and class activities to help you to decide when a student needed individual help?

T: Yes I think so.

I: Do you think there is a need for testing materials to be incorporated in the program to help the teacher evaluate the student?

T: I would like it myself.

I: What would you like?

T: I don't really know. But like at mid-year I'm thinking are they really getting it, because on workbook days sometimes they would do well and other days they wouldn't. I guess if I just had something to reassure myself along the way that I was doing O.K.

## Interview 11 (continued)

I: How well do you think your students like CSMP compared to other math programs?

T: Oh, they like it.

I: Are there any types of students that like this program better?

T: I imagine the ones that would be a little slower in math, like it because of all the manipulative things there are to work with.

I: Are there any types of students who don't like the program?

T: You know I got a new student in like the last four months of school and she did not like it at all. She didn't want to learn to use the Minicomputer, and she didn't. So she has disliked it pretty much. But most of the children I would say really enjoyed it.

I: What are the students' reactions to the Minicomputer now?

T: They don't want to use it at all. Mine don't.

I: Do you think your students can use the Minicomputer fairly well?

T: Yes. I think most of them can. Yes.

I: Do they ever use it for a difficult problem or - ?

T: No. My children will guess before they will use it. Mine have the feeling now they're too big to use that. They don't need it.

I: What do you think of the Minicomputer?

T: I think that it's a real help, however, I might tend to use it less. I might have gotten the children away from it a little bit sooner. I think they were ready.

I: What special things did you do for the students who entered the program at the beginning of September?

T: Well I just had one and I worked with her for just a short time at recess a few days and she caught on really quickly.

I: What did you stress, just the Minicomputer?

T: The Minicomputer, that's all she needed help with. She caught onto the arrows, building roads, and all that.

I: Did that work out fairly well?

T: Yes. She's doing real well.

I: What special things did you do for the students who entered in the middle of the year?

T: Basically the same thing. Extra work with the Minicomputer. I feel that's one think that is difficult for a new child coming into the program.



Interview 11 (continued)

I: How well did that work?

T: She did not do very well.

I: You just had the one?

T: Yes.

I: Should more attention be paid to the problem of new students in the teacher's guide?

T: I would say so.

I: What do you think would be helpful?

T: Gee I don't know. I don't know how to answer that.

I: What type of special help did you give to slower students?

T: You know I really did not do that much of that. I would just go around the class myself and those that were having trouble I would help. I did have several children that were having trouble with fractions,  $1/2$  and  $1/3$  on the Minicomputer, and I just put them together in a small group and gave them individual help. If I was busy with something else, helping others, then I would say go get a friend and work with the friend.

I: Do you think this program is as appropriate for slower students as other programs?

T: Yes.

I: About the same, more, or less?

T: I would say probably more.

I: How appropriate is the spiral approach for the slow student?

T: I would say fine. It does a good job.

I: Do you think the orientation and training you received was satisfactory to you?

T: Well, I guess I'm in an unusual situation there because I wasn't able to attend all of it. I was there three days and I got enough. I didn't feel that I had any problem.

I: What is the minimum preparation that a second grade teacher would need to successfully teach CSMP?

T: I think a couple of days. I think the manual was so explicit that really it isn't all that necessary. Other than just an introduction to the program because if you just sit down and look at the manual of course you are going to think - Wow! What is this?

I: How extensive has parent reaction been?

## Interview 11 (continued)

T: You know my parents have objected to the Minicomputer. They wanted their children not to depend on that. I've had a few that were upset, their child is being used as a guinea pig as they call it.

I: Have there been any presentations about the math program for the parents?

T: We had open house. For the parents that came to open house I did a brief thing with the Minicomputer and showed them briefly how it worked, but that was the only thing that I did.

I: What was their reaction to that?

T: They were amazed.

I: Were these parents that - ?

T: No. Those weren't the ones that complained.

## Interview 12

I: Now that you have taught the CSMP program for two years what is your general impression of it?

T: I like it. I think it's good. I think it has its drawbacks but I think that the brighter ones get a whole lot that they wouldn't have gotten out of the regular math program. I didn't think it hurt the low student even though there was a lot they didn't get out of it, they wouldn't have gotten it out of a regular program either. I enjoyed teaching the first grade program more than I enjoyed teaching the second.

I: Why?

T: It was more of a change for each lesson. It was just a little more fun each lesson than in the second grade. I think the way they teach the fractions is fabulous. That impresses me and the teaching of regrouping and addition and subtraction, I think those are really the high points of the second grade. Now since we aren't going to use the program next year and we felt that we needed to drill a little bit more to get them ready for the regular program we didn't do the parallel lines. We felt like really they wouldn't be using that as much next year and we thought they needed practice in the other things more.

I: In what ways if any did you find your perceptions of the program changing during the two years?

T: Well not really. I don't have very many preconceived things until I get into it. It was such a different program. Each lesson was different and I didn't know what it was going to be until I got into it.

I: How does CSMP compare with other second grade math programs?

T: I think it teaches them more and I think it's more interesting. It's more group work. And on every lesson we could, we tried to get participation from as many of the students as we could. Where I didn't think there was as much of that in the other program. It wasn't always two sheets a day. It was some days you did a sheet, some days you did it on the board if there were games.

I: What do you think are the main differences between this program and others?

T: I think this has more ideas that it teaches. I'd like them to put a little time and measurement simply because I think if it's not there we're so busy we just sometimes don't get around to it. Where if it's in the program we would. But I guess that's our fault not the programs.

I: What do you think are the best aspects of CSMP?

T: I like the workbooks. I thought they were good. I thought some of them got a little hard a little early. I mean by the time they were in four and five they were really hard. Where in the first grade you got up to seven I guess it was before it was real hard. I had nine top ones, so mine could do all of the workbooks. So it's kind of hard for me to judge that way. But I did like

## Interview 12 (continued)

the workbooks. And I liked the regrouping and addition and subtraction. I think from now on I'll always teach them to recognize the problem before I even go into it. That's just such a good way and I never have thought of it before. I thought some of it was kind of redundant. I got bored with the minicomputer and I think the kids did too. And with the switching of cycles we had almost half of our children hadn't seen the minicomputer at the beginning of second grade and that was really a drag.

I: What are the worst aspects of the program?

T: I don't think they do enough with subtraction. Either that or children were over-educated when they came to a number fact that's 17 take away 9 they'll say 7 take away 9 is a negative 2. So they come up with the one in the tens place and the negative 2 in the ones place and they really never have seen number facts per se. And I think that really is hard for our kids. I think they need a lot more subtraction drill in it.

I: About how long is your math class every day?

T: Oh 50 minutes to an hour. That's not counting workbooks. We don't use workbooks on workbook days the way they do. There's not enough days set aside for it. We'll give them out in the morning when we have reading and then we'll collect them. I'll go over them and I'll see anybody that I need to see that's having trouble. Then I might wait a day or so and pass them out again. They just can't get through them fast enough. There's too much work in them for a four or five period lesson before you switch.

I: How do you assign the workbooks to the students?

T: We start out mostly by the achievement tests. Anybody that scored below grade level or we felt had a problem started out in R1. The ones that hit grade level we started with an R3. Anybody new that came in we started them in R1 and if they picked up, of course then the next time we handed them out we put them in an R3.

I: Did you keep track of their scores in workbooks?

T: Not as scores. We kept track as they finished a workbook to see how far they could go. I preferred last year. I got 30 of everything even though I had nine and I started them in the R1 and I liked that because every child achieves well the first time through and I think it doesn't hurt them to go through something that's too easy. I think they really get a sense of accomplishment in getting that book back with possibly the whole book correct or just one or two mistakes. And I think that makes it a little easier to go to the next one then.

I: Was there enough information from the workbooks and the worksheets and the class activities to help you decide when a student needed individual help?

T: Well I don't know. I feel like I didn't have as good a record keeping as with another program. I'm not as sure where each student is. I know the high ones and I know the low ones, but the ones between. It's kind of hard to find out who was just kind of riding on the other coat tails and who was doing it by themselves.

## Interview 12 (continued)

I: How did you decide then who needed extra help?

T: By the workbooks mostly.

I: Do you think there is a need for testing materials for the teachers in the program?

T: Just for us mainly. You know every 20 or 30 lessons. Just a worksheet that kind of combines what you have taught.

I: How did the class time compare with the class time usually spent in teaching math in other programs?

T: I guess it's about the same.

I: Were the suggested times in the manual reasonable?

T: I thought that most of the time they were a little more than was necessary. A few lessons ran over but that was usually if I took it a step higher or thought of something we wanted to do. It was ample time.

I: How did the time that you spent in math class compare with the time you spent teaching CSMP math in the first grade?

T: Well I only had nine in first grade and golly we could whip through three or four of those in the same amount of time. I know Mr. Herbert, when he came to visit, he must have thought that we had coached them because we could zip through those things like nothing.

I: Did you have to repeat certain lessons this year?

T: No. We didn't repeat any, but there were a few times we put something on the board for seatwork if we wanted to be sure who had gotten it.

I: Did you change the order of the lessons at all?

T: At the end we did. We cut some of them out. We didn't go into the decimal point because they wouldn't be having it next year.

I: Did you use supplementary materials?

T: Worksheets, occasional worksheets we used for seatwork. Just so they would be used to what they were going to see next year.

I: Did you find it was a problem to keep track of the program materials?

T: It wasn't this year because we didn't move. We were in the same room all year long.

I: How well do you think your students like CSMP as compared with other math programs?

## Interview 12 (continued)

T: I think they like it as well. . I don't think they dislike it. Of course the better ones probably like it better because they're doing more. And the average ones probably like it because they're doing more. The low ones probably aren't going to like - you know be gung-ho for any of it. I think there's more enthusiasm from the better ones though definitely.

I: What type of students don't like the program?

T: Well I really don't think we've had any that don't like it. I think that it's such an audio and a visual type thing that a child with a listening problem may miss a whole lot that they might have gotten by having that sheet of paper and you walking around and making sure they were keeping up with you and writing it on the paper. When I'm standing at the front giving a lesson I don't feel that I have that control over the poor listener.

I: What are the students' reactions to the Minicomputer now?

T: We haven't done the Minicomputer for quite a while. The lessons don't have it. The ones that could do it liked it. The ones that couldn't didn't understand it. It's really a problem for a child that comes in the middle of the year. I don't care what CEMREL does, it's a problem.

I: What special things did you do for the children who came in the middle of the year?

T: We had others help them. We put them next to one that could do it. By second grade the Minicomputer really isn't as big a part of the program as it is in first grade. When we got half of them at the beginning of the year that couldn't use it we actually divided the class in half and had lessons every day. There's some though that never did get it.

I: Can most of your students use the Minicomputer fairly well?

T: The really good ones haven't wanted to be bothered with it. They learned to multiply and carry the number in their head. The good ones could get where you were subtracting and adding those negative numbers but for the low ones that's just beyond them. But we just considered that a lesson for the better student. There's going to be some in every program that aren't going to get it.

I: What do you think of the Minicomputer?

T: I enjoyed it in first grade. I didn't enjoy it as much in second grade. Because I think the students couldn't do it as well. You know you enjoy more what they are doing well than what they are having trouble with. The lessons just seemed more interesting leading up to the Minicomputer in first grade where second grade it was just using it as a tool rather than as part of the lesson. Even the average ones have trouble doing it by themselves. If you are doing it as a group and they are coming up and helping they don't seem to have a problem but when they are by themselves with no one to make sure they're doing it right, they have problems with it. They'd much rather try to do it on their own with their own skills than use it for a problem.

I: Do you think more attention should be paid to the problem of new students in the teacher's guide?

## Interview 12 (continued)

- T: I don't know what the teacher's guide could do. It's just you don't have that time in the classroom. It's a time thing in second grade. We really feel like the bulk of our time should be spent on reading and then next priority is math but you just don't have that much time for a one-to-one relationship for a new student. You're neglecting 25 others and it's just really a time problem.
- I: What type of special help did you give slower students?
- T: Toward the end of the year it was just really more of putting them with one that could do it and having them explain it. But by that time you were in it so far that it was really a lost cause.
- I: Do you think this program is as appropriate for slower children as other math programs?
- T: I think it is as appropriate as what we would consider a standard math program, but I think possibly there are programs on the market or in the process of being researched strictly for the low math student. But I think this is as good as what else we choose from.
- I: How appropriate is the spiral approach for slower students?
- T: I guess it's probably better because you go back to it more often - the skills. But I think they need more drill maybe than CEMREL has. But that's a complaint with the regular program too, that they don't go back enough.
- I: How extensive has parent reaction been this year?
- T: We haven't had any. A few times we've gotten a note that a child is having trouble with the Minicomputer, a new student and it upsets them. I had a program last year on the first grade one and we've had really no reaction.
- I: Have you found that some of the students who couldn't get the elementary concepts in first grade are finally getting them in second grade.
- T: Some of them.
- I: Overall how does the second grade program compare with the first grade program?
- T: Like I said I didn't feel the lessons were as interesting. It's good for a top student to know probability but I think it kind of leaves the lower ones behind. They don't understand it and it keeps appearing in their workbooks and they still don't understand it and you keep moving and you really don't have time to go back and try to pick them up.
- I: Do you have any other comments to make?
- T: I enjoyed it. I wish they could have it next year. But it was a money problem. It was much more expensive because in third grade we buy the bound books and then they are used year after year after year, so it really did make a difference. In first and second grade it wasn't so much.

## Interview 13

I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?

T: I generally like it but I'm not sure how well it works with low ability kids because I've only had one boy that I would say would fit into that category. So I think it's really a good program for very bright children and for the average it seems to work well too but I'm not real sure about how it goes along with the low child.

I: In what ways did you find your perception of the program changing over the course of the year?

T: I generally liked it from the beginning. It's about the same.

I: How does CSMP compare with other second grade math programs?

T: Well we had one other program and I liked all the different activities that the CEMREL program has and all the workbooks. They were very attractive to the children and they seem to enjoy working in them. And just all the different activities that they had instead of the same workbook pages they did about every day and they never changed in variation. I liked the skills that were taught too. They introduced a lot more different type of mathematical skills at a younger age and the kids seem to enjoy being able to do some of those things too.

I: What do you think are the best aspects of the CSMP program?

T: I don't know. I just think being able to introduce all these different math concepts at such an early age is really good and then being able to develop it later on as the child gets older.

I: What would you say is the worst aspect of the program?

T: I thought some of the stuff was just too abstract. It wasn't concrete enough for a child that was having a lot of trouble in math.

I: Can you think of any specific examples?

T: I can't remember but we had some children who came up from the LD room. I don't know if it was just way too fast of a pace but they just seemed like they were lost and got very frustrated. They looked at the page and there was hardly anything they could do on it. So it was just a little bit too fast of a pace for them. And when they sat and listened to a lesson I know their attention wasn't lasting very long because they didn't understand enough of what was going on. I had a lot of trouble with that. And then finally they stopped coming because it was getting to be very frustrating for them.

I: What type of help did you give to the slow students?

T: I would try to work with them on a one-to-one basis whenever I could since I had such a small class, but they wanted to be able to go on and get the page done. They didn't always want somebody there helping them. Sometimes I'd pair them up with some of the other students. And sometimes they liked that and other times it just made them feel kind of bad.



## Interview 13 (continued)

I: Do you think the program is as appropriate for slow students as other programs are?

T: Well I only know about the one other math program that we had before and that was just a lot of drill and I'm not sure how much they learned that way either and I haven't seen that many of the new math programs to see how they present it.

I: How appropriate do you think the spiral approach is for slower children?

T: I think it confuses a lot of them because they don't really get enough practice in it to understand it well enough. I think that's what frustrated some of them because they would maybe catch on a little bit but then they had forgotten what they knew the first time and they introduce it again and maybe they'd catch it and maybe they wouldn't but it just seemed like it was a little bit too fast paced for them.

I: About how long is your math class every day?

T: I generally follow the time suggested in the manual. So I guess it would be about an hour each day. Like a half hour lesson in the morning when school starts and then a half an hour sometime in the afternoon.

I: How does this compare with class time usually spent in teaching math?

T: Well before I was spending maybe an hour or 45 minutes in the afternoon. One big block of time and I really like having the two separate periods. I'm going to continue that even when I go to a different math program.

I: Did you find that the suggested times in the manual were reasonable?

T: Yes. For the most part.

I: Can you recall any specific instances where they weren't?

T: I just remember a couple of lessons that we got done a lot faster, but that might have been because the class was small and everybody had a turn.

I: Did you have to repeat any lessons?

T: I did some repeating with the Minicomputer on some of the plays whenever we would come back from a break. I would go through some of the things that we had done before; particularly if it was something new that most of the class didn't understand.

I: Did you have to change the order of the lessons at all?

T: Only when materials weren't available.

I: How often was that?

T: At the beginning of the year it was quite a lot. I can't remember any more. There was a lot of time in there where we didn't have the materials. I would just kind of pick and choose lessons that I could use. And I didn't have the manual for one part either and I had to send for that.

## Interview 13 (continued)

I: Did you use very many supplementary materials?

T: I had some games that I had left from other years that we used for math and quiz-mo, things like that, math baseball. I had some math worksheets that I have given them to use. Since we're going to a regular math program next year I thought I'd give them a few of those so they can be familiar with that kind of math program before they got into third grade.

I: Did you find it was a problem to keep track of the program materials?

T: No. We had a filing cabinet and we kept everything in there. The Minicomputers I kept in a can. I would have liked a box or something.

I: How did you assign the workbooks to students?

T: Generally from the way the first grade teacher suggested last year. She left off at a certain point and suggested I put kids in these workbooks and I mainly went along with her suggestions. When new kids would come in I would try to see what they knew and try to start them out pretty low until they caught on to the program

I: Did you keep track of the scores in the workbooks?

T: No, I didn't keep them in a grade book or anything like that.

I: Was there enough information from the workbooks and the worksheets and the classroom activities to help you decide when a student needed individual help?

T: I think for the most part I could tell when I'd go through workbooks and see that they had forgotten how to do a particular point that I'd have to go back and sometimes I would take them in a group and re-teach those particular kids that had the problem on those pages.

I: Do you think there is a need for testing materials to be incorporated into this program?

T: Maybe in a larger classroom, but with this small group of kids I pretty well knew what everybody was doing and where they had problems. But if it was a class of 30 kids or even more I think it might be nice to have some kind of tests that you could give every once in a while just to make sure.

I: How well do you think students like CSMP compared with other math programs?

T: Well when we started second grade I said we were going to do this lesson in math they all cheered. They were all really excited. And they're still pretty much excited about the math workbooks. But they are getting tired of the arrow pictures and they don't like using the minicomputer very much any more. They want to do everything on their own which I guess is a good idea.

I: Do the students ever use the minicomputer on their own for difficult problems?

T: Only if I tell them because they really want to be able to do everything. They're very independent and they want to think of some way themselves or have you tell them another way to do it so they won't have to use the minicomputer. They want to get it done and not have to worry about the mechanics of doing the minicomputer.

## Interview 13 (continued)

- I: Do you think most of the students in the class can use the Minicomputer fairly well now?
- T: Most of them. There are some that still get confused if they should go backwards or frontwards or what kind of play they should use.
- I: What do you think of the Minicomputer?
- T: I think it's good. I think that they should be able to use it and work through some of those problems but the kids don't seem like they enjoy using it any more. In first grade I guess they did but it seems like when they get to second grade for some reason they have gotten very independent.
- I: What type of student likes this program better?
- T: I would think the brighter students in my room seem to enjoy it the most. They're challenged by the problems and the things in it.
- I: Which type of students don't like the program?
- T: I can only think of a couple of kids that seem like they dislike math and they are average and one boy is low.
- I: What doesn't appeal to them do you know?
- T: Oh, I don't know. The one boy might be saying it because he always has a comment about everything you do. No matter what you say you are going to do he has a comment. Then usually when he gets into it it's not as bad as what he thought it was going to be but whenever you say we're going to do this, he'll kind of groan or something.
- I: What special things did you have to do for students who entered the program at the beginning of second grade?
- T: We tried to go through and show them the Minicomputer and how to make the plays on it because they still did a lot of that in the beginning, and the negative numbers and the arrow pictures. I worked with them and had some of the other students work with them.
- I: How well did that work out?
- T: I just had one boy that came in that was bright anyway and he picked it up.
- I: What special things did you do for the students who entered the program later in the year?
- T: I didn't have.
- I: Do you think more attention should be paid to the problem of entering students?
- T: I think so.
- I: What do you think would be helpful?

## Interview 13 (continued)

- T: Well I think it would be good if the second grade teachers knew how the Minicomputer was introduced and how some of those things were introduced in first grade. In the workshop I had we weren't really told how the Mini-computer was introduced and how all this stuff was presented, so I kind of went on my own and how I thought it should be presented but I'm not sure that was the best way.
- I: Do you think the orientation and training you received was adequate for you?
- T: No. I would have liked to have more practical type. I would have liked to have done more of the lessons rather than so much of the history.
- I: What is the minimum preparation second grade teachers need to successfully teach CSMP?
- T: Maybe one week, a week and a half, two. It would depend on how they were going to present it. I would have liked to have had a lot more practical stuff in the workshop, how they introduced some of those things in first grade and how to handle the new students who came in. Their ideas about how you should approach it.
- I: How extensive has parent reaction been?
- T: I haven't heard very much. Nobody's ever made much of a comment one way or another. For conferences they'll just ask you how is my son or daughter doing in math and that's about it.
- I: Have there been any presentations about the math program?
- T: They had one in first grade last year. And I think the parents that went were pretty enthused about it. But they haven't had anything this year.
- I: Do you have any other comments you'd like to make?
- T: No. I don't think so.

## Interview 14

I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?

T: Well I think it has an advantage for the brighter students because it challenges them more than a traditional program. Several things are standing out in my mind of different advantages it has in teaching different methods in beginning math that I like. Generally I enjoyed teaching math this year more and I guess that the CEMREL math program had a lot to do with that. Also I had a team-mate who had taught it the year before. And I think that was an advantage for me personally.

I: Did you find your perception of the program changing during the course of the year?

T: I felt that I was continuously learning, myself, throughout the year and based on that, you perceive different areas in another way.

I: How does CSMP compare with other second grade math programs?

T: Overall it was much better I thought. I think that the different levels of the workbooks and the worksheets helped too because I felt that I could spend time with the kids that needed it; that I could also individualize, and give the kids that needed more of a challenge, that too.

I: Are there any other main differences between the two programs?

T: Oh yes. All the different techniques we use with CEMREL. You are actually teaching a lot of more logical thinking and they learn to manipulate various materials. I think that because I had with this program, a lesson plan that I hit it more strenuously too and really kept a momentum going and that I might have been a little more lax with just the traditional program.

I: What do you think are the best aspects of CSMP?

T: One thing that stands out in my mind is addition and subtraction and regrouping. I like it. The children identify the problems that don't need special plays, either forward or backward. Then they do all the ones at the beginning that don't need the special plays and then later most of the children do the ones that use the special plays. I really like that. And I like the way fractions are taught. I like the bakery. Fractions are always a hard thing to teach and the story atmosphere I thought was good.

I: What do you think are the worst aspects?

T: Well I didn't care too much for the parallel lines things. I'm not avoiding the Minicomputer. I have mixed emotions over that. I saw real value in the Minicomputer in some areas, the presentation and as far as the children learning the exact basis for a math method. In our situation with the Minicomputer we had so many kids that hadn't had it and I think as far as making the children master it that would be undesirable, at least it was to me.

I: What is the children's reaction to the Minicomputer now at the end of the year?

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## Interview 14 (continued)

T: We have not stressed the Minicomputer in this fourth quarter. So I haven't really used it that much. Unless the children wanted to use it individually when they were doing their math workbooks, but as far as group presentation I haven't been stressing it the fourth quarter.

I: Would very many of the children pick up the Minicomputer by themselves if they had a hard problem?

T: In that big class it's kind of hard to say. A lot of them would. They realize that it was a method to help them calculate. And when they got into the bigger numbers or numbers that they couldn't do in their head, then they did.

I: Can most of the kids use the Minicomputer fairly well? 2/11/84

T: Well here again we get into that problem of half of our second grade have never had the Minicomputer in the first grade. And then we had a lot of people that came in. So all the people that had the Minicomputer last year can use the Minicomputer pretty well this year.

I: What special things did you do for your students who entered the program at the beginning of second grade and who hadn't had the program in first grade?

T: Really stressed the Minicomputer. Since I had never taught the Minicomputer I took a special group in an additional math period time and I did the first grade Minicomputer lessons, because I felt that I really needed a basis on the Minicomputer and they did too. And I did that every day for several weeks.

I: How well did that work out?

T: It was frustrating at times because some of the kids were having a little trouble but then I could see the progress they were making. And then when they were trying to keep up with the second grade Minicomputer lessons I felt it was a necessity. So I think that it's a good idea if you can arrange it. I, in this situation could arrange it but in the normal classroom you'd have to be giving the other children some work.

I: What special things did you do for the students who entered the program later in the year?

T: Then they were given individual help with the teacher at either class period time or workbook time, and we would also assign a student tutor.

I: Did you have any specific problems with the Minicomputer or arrow diagrams with these new students?

T: If they came in and they were good in math they had less of a problem than the children who were poor math students. It depended upon their ability.

I: Should more attention be paid to this problem of new students?

T: I think you frustrate yourself, I really do. Unless you're so adapt yourself with the minicomputer or you really enjoy it a lot more than the usual amount as a teacher, like if it were a hobby with you, otherwise I feel that it would just frustrate you as a teacher.

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## Interview 14 (continued)

I: What would be helpful to be included in the teachers' guide?

T: Well if possible they could go out to a first grade math lesson if CEMREL were in the same building. That and then the student tutor and then any individual teacher help that would be available time wise.

I: What special help did you give to the slower students?

T: Well we didn't demand that they do a second worksheet or work any faster than they could in the workbook series, student tutors, and individual teacher help.

I: Do you think this program is as appropriate for slower children as other math programs?

T: I think so.

I: How appropriate is the spiral approach for slower children?

T: Oh very good. It's higher for their attention span and the familiarity of coming back to it again and again, that's very good.

I: About how long is your math class?

T: An average of 45 minutes.

I: How does this compare with class time usually spent in math in other programs?

T: I guess it was about the same. Some days we would spend more time with CEMREL because we used our workbooks as seatwork too. So totally I spent more time teaching CEMREL this year. The factor of using the workbooks as seatwork too entered into that. That's another thing. I don't see how you can get through all those workbooks unless you use them more often than the lesson plan has time allotted.

I: Was the suggested time in the manual reasonable?

T: Yes they were.

I: Let's talk about the sequence of lessons. Did you repeat certain lessons?

T: No.

I: Did you change the order of the lessons?

T: No.

I: Did you use supplementary material?

T: Yes. We used worksheets, flash cards, games - sport games, verbal games.

I: Did you find it was a problem to keep track of the program materials, the workbooks and the worksheets?

T: No.

I: How did you assign the workbooks to the students?



## Interview 14 (continued)

- T: I kept asking that question at the workshop and never got what I considered a satisfactory answer to that. I wanted to know how do you know where to put the children? I was more aware of making sure that each child was in a slot where they really belong. And when it got down to the practicality of it we said we'd use a couple of things as guidelines. We used the Stanford math score and at the beginning we did some of the lessons all together. So we used classroom observation and daily worksheets, how they were doing there, and also the Stanford as a guideline trying to decide which workbook to start them in.
- I: Did you keep track of their scores in the workbooks?
- T: We kept track of how many they completed in each level.
- I: Did you require them to complete the entire workbook correctly?
- T: Each time they had a workbook we would check it. And if they needed help they would get the help then. And then they were given another time period to finish the workbook or as many time periods as it took them. And we did expect them to finish the whole workbook before they could go on to the next one, but they were given plenty of time and given a lot of help.
- I: Was there enough information from the workbooks, worksheets, and classroom activities to help you decide when a student needed individual help?
- T: Well if they just were getting it wrong, if they couldn't do it then that's when they got the help.
- I: Do you think there is a need for testing materials for the teacher?
- T: Yes I do. I had trouble. I couldn't figure out if it was because I didn't have tests with the CEMREL program per se or if it was because I had this big class and had never taught CEMREL before. But I had a lot of trouble evaluating each student. And that was one reason that we finally took our reading group and taught those children and worked with those children in the workbooks. So that I would be working with a smaller amount of children in that big large group. So that I could zero in and evaluate them better because I had trouble evaluating each child. Testing might have helped. I would have had something more for a guideline.
- I: Do you have any idea what you'd like or how often these tests should be incorporated?
- T: I think at the end of each workbook series would be a good time.
- I: How well do you think your students like CSMP compared with other math programs?
- T: I think they enjoyed it. They were very enthusiastic.
- I: Which types of students liked the program better?
- T: I think all of them. Nobody in particular. The brighter student I guess in my classroom probably liked it this year better.



## Interview 14 (continued)

- I: Was there anything that appealed to most of the children?
- T: Oh I think they liked the arrow diagrams. I think they liked to color for one thing, the idea that they are kind of drawing. They like the bakery stories. Just the whole thing in general.
- I: Do you think the orientation and training you received was satisfactory for you?
- T: I have felt throughout the year that I needed more help with that Minicomputer. I have taken two of Papy's modern math courses just a few years ago and so I felt like I was familiar with different aspects of the program as far as math was concerned but then when you are talking about actually getting in there and teaching the kids what I really needed to know was that Minicomputer, how to do all those plays and I needed more practice in doing that.
- I: What is the minimum preparation a second grade teacher would need to successfully teach the minicomputer?
- T: I think a week is O.K. But I just think they should stress that Minicomputer. Don't go in and talk and have all this intellectual discussion. Get very practical and hit those things that you are going to use in class.
- I: How extensive has parent reaction been?
- T: I guess parent reaction was more noticeable last year when CEMREL was used for the first year at this school. This being the second year, it was just taken for granted that this was math.
- I: Have there been any presentations for the parents?
- T: Not this year. There was last year.
- I: Do you have any other comments you'd like to make?
- T: No.

## Interview 15

- I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?
- T: I always defend the program at any meeting. I really like it because for the students that seem to fail in math, there are some points of it that they can comprehend and they can work with. Every lesson has part of it that they can understand. They feel better themselves about what they are doing. That's why I like the program. Also they learn so much more of a variety of things than they do in the regular math that I teach. And the other thing I like is I don't get bored myself. There's something new every day. We don't repeat the lesson until they learn it, we can go back and get it later.
- I: In what ways if any did you find your perception of the program changing over the course of the year?
- T: I don't think it really changed at all. My feelings toward it?
- I: Right.
- T: I wanted to teach it at the beginning of the year. I had a choice, I didn't have to teach it. They were going to let the other teacher go ahead and do it but I said that I wanted to after reading the book and so it's been the same all year. I'm still just as enthused about it as I was at the beginning.
- I: How does CSMP compare with other second grade math programs?
- T: It lacks time telling and Roman numerals, that was all. Those were the only things I had to do on my own. Other than that it's so much more interesting and more involving.
- I: Are there any other main differences between this program and others?
- T: The whole method of the way you teach it. They are telling us now to be individualized in math so we have to more or less set up our own programs after we test the children and set up things that they need to do and work on and give them page numbers and this is not like that at all. It's all teacher directed and the workbooks are individualized. So there's a big difference in the programs, yes.
- I: What do you think are the best aspects of CSMP?
- T: I like it that the lessons are teacher directed to begin with the whole class and if there's worksheets or things like that then I can go around and help individually. I find that is more effective especially in the second grade. Having the children work individually doesn't always work. They're just not capable of doing that at that age and I personally like that method of teaching best. What was the question again now?
- I: What do you think are the best aspects?
- T: I like the spiral method, where we don't repeat every day, you know that it's repeated every so many weeks.
- I: What are the worst aspects?

## Interview 15 (continued)

T: Of the program, I really don't have any bad comments about the program.

I: How long is your math class every day?

T: It's supposed to be 40 minutes but it's usually like 35 by the time we get the children switched.

I: How does this compare with the class time spent in your other - ?

T: It's exactly the same.

I: Were the suggested times in the manual reasonable?

T: Yes. They're almost exact, almost always. Just this past month or so it's been getting harder and a few of the children have been lost mainly because it's getting so much harder but I can supplement them with old workbooks and I'm not trying to frustrate them so I'm not taking them any farther. So they're working in old workbooks while I'm going on with the rest of the class. We have cut the lessons a little bit shorter than the time allotted. But most of the year they were exact right times.

I: Can you think of any specific instances when the times were not reasonable?

T: Well when I use the workbooks I use them for the whole time. They usually put them in with another lesson but I don't. By the time I get the workbooks passed out and their boxes that I keep everything in then that takes the amount of time that I would use for another lesson. That's about the only time I can remember.

I: Did you find that it was a problem to keep track of the program materials?

T: No. The coordinator came over and helped me organize it and it was all organized before we began the program. I have everything in their boxes and they keep track of it. It wasn't hard, no.

I: How do you assign the workbooks to students?

T: I'd say half of the room that's on the average ability or above I give them the first average workbook each time and then when they complete that then I check their book and then I give them the next workbook. Even the superior ones I still start on the average because they go so quickly there's nothing left for them to do. And then the slower children I start them with the first remedial one or whatever you call it and then move up.

I: Do you keep track of their scores after you check them?

T: No. If they missed more than what I think is necessary on a page then I just have them do that page over. I help them with it and I can see where they need the work. I just write good or very good or something like that, I don't give it a score.

I: Was there enough information from the workbooks and the worksheets and the class activities to help you decide when a student needs individual help?

T: Yes I think so. I think teacher common sense tells you that.

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## Interview 15 (continued)

- I: Do you think there is a need for testing materials for the teacher to evaluate the students to be incorporated into the program?
- T: Well in my situation I'd say no. Because in this district there's no grades and it's all on very good, good, or improvement needed and in all of the areas I've just set up my own criteria that I test children in aside from the actual math program. I think that the workbooks are excellent because sometimes they can do the work when I'm doing it with them but then when they come to a workbook page and they don't know how to do it then it's very evident and I know exactly what their needs are. I don't feel that there should be any other test.
- I: Let's talk about the sequence of lessons in the second grade. Did you repeat certain lessons?
- T: No. I never did. Not the same lesson.
- I: Did you change the order of lessons?
- T: Yes. Just because of time elements. Sometimes they would put a 25 minute lesson with a 20 minute lesson and I knew that there would be no way that I could complete them so I just changed them around.
- I: Did you use any supplementary materials?
- T: For time telling and we worked on Roman numerals for a while and I think that was the only time. I didn't use any books or anything like that.
- I: How do you think your students like CSMP compared to the other math program?
- T: I know the other students would rather be in it. They are very jealous of the CEMREL students learning multiplication and doing things so early. And I don't think that the CEMREL students would want to switch.
- I: What types of students like this program better?
- T: I think my advanced students feel challenged some of the times which in another math program they would just be going straight through it and there would be no extra problems for them to do. But then the average students really do shine where they might be overlooked if they were in a regular math program. They all have their turn to come up and do something at the board. I think they really feel important. And then the lower students, I think they feel success too. No. I don't think there's one type, I think there's something different in the program for each of those three groups and I think they all equally show.
- I: Do you think your orientation and training that you received was satisfactory?
- T: More than.
- I: What do you think is a minimum preparation a second grade teacher would need?
- T: I didn't take the workshop last summer because I wasn't even assigned to this building until two weeks before school started so I was just shown the program and I read the little booklet and I decided that I wanted to teach it, so I just began teaching with no introduction at all and during the school year I had

## Interview 15 (continued)

to make up those hours that I didn't take and I thought it was a complete waste of time because I was already teaching it and it was very self explanatory. I went to that workshop all year long and there were some teachers that didn't catch on at all. I think that I really understood it right away and when I read the lessons ahead of time I never had a question about it. I would think an hour or two at the very most to just show what the program is all about and how the Minicomputer is used. Just a brief summary of the whole thing would be more than enough for an adequate teacher I would say.

I: How extensive has parent reaction been?

T: Parents really do like it and if we weren't going to have it next year I know four or five parents that were going to go to somebody to get it back. They are very impressed with it and I think they really do like it.

I: Have there been presentations about the math program for parents and/or community groups?

T: There was last year. I wasn't here but last year they were given some presentations. And this year I had a couple that said they would like to see that again and I said something to the principal but he didn't think it was necessary to do this year. I could see possibly next year they might. They were presented with it once.

I: What special things did you have to do for students who entered the program at the beginning of second grade?

T: I didn't have any.

I: You didn't have any?

T: See we have the two math programs so anyone that was new and did not have it last year we just put in the other program and anyone who entered this year we just put in the other program. So I've never introduced anybody to it.

I: You didn't have a lot of problems that some of the teachers had.

T: Now next year we only have CEMREL math in second grade so if there are any new students I will have to.

I: Is there any type of student that dislikes the program?

T: I have two or three that have hardly any attention span at all so it's very difficult for them to get involved and I don't think that's the programs fault. I think the student would be that way no matter what program he is in. But since there are a lot of things that are teacher directed then it's hard for them to listen.

I: What are the students' reactions to the Minicomputer now?

T: Most of them don't use it anymore. They don't want to use it. And that's become a little bit of a problem because there are ten or so in the room that should. They still need to use it but they don't want anybody to see them using it because if the others don't use it they don't want them to know

## Interview 15 (continued)

they have to. So that's become a little bit of a problem now. And I try to work around that. I think there's ways you can. For subtraction they use it mainly now. But that's about all we use it for anymore.

I: Can most of the students use the Minicomputer fairly well?

T: Yes. That's why I really like it, they know place value more than the other math group.

I: What is your reaction to the Minicomputer?

T: Oh I thought it was fascinating when I first saw it. I really like it. It makes things so much clearer in their minds I think than just seeing a bunch of numbers written down. You know they see where it goes and how it moves and sometimes they amaze me with the things that they can think and know how many plays it's going to take and things like that.

I: What type of special help do you give to slower students?

T: I had a student teacher for a quarter and I would take them out and help them individually on things. When they don't do things right on a workbook page then I help them for part of the class time to see how they do it. I've gotten some of the first grade workbooks and brought them up and had them work on certain pages of that to back up what they didn't learn at some time.

I: Do you think that this program is as appropriate for slower students as other programs?

T: Yes.

I: How appropriate is the spiral approach for slower students?

T: I don't know. I think it keeps their interest more but they do forget from lesson to lesson and if I was teaching just to them I would have to do mostly reviewing and then just introduce just one new thing. I think it's going to be slow no matter what program they are in. I don't think it's hindering them that much but I can see where they do learn more by repetition.

## Interview 16

- I: Now that you have taught the program for nearly a year what is your general impression of it?
- T: I like it very much. The children are so much farther advanced. Out of the eight years I've taught, I've taught the high math groups seven years. And the only book I've taught was the Scott-Forsman book but from using this one book as a comparison of the CEMREL program the children are so far advanced and so enthused that there's just no way you could convince me to give it up and go back to the old book.
- I: In what ways if any did you find your perceptions of the program changing over the course of the year?
- T: Well when I was at the workshop in St. Louis, Dr. Haage kept telling me that the children could do it. And I kept saying "They can't do that hard work. I know they can't." And he kept saying "Oh yes they can. You just wait and see." I was just completely amazed at some of the reasoning ability of some of these second grade students. How sharp they really are in math when you give them an opportunity to do it. The positive and negative numbers, I thought no way a second grader can come up with this kind of information. On one lesson it said the child would be doing well if he could verbalize the fact that because you were subtracting a smaller number then the answer would be greater than the one before. And the example happened to be 75 and 29. And I asked the boy why did you come up with the answer that you did and he said "Well 70 minus 20 is 50 and 5 minus 9 would be a negative 4 and 50 plus a negative 4 would be 46." I said "Say this again." because he lost me. I wanted to make sure that I hadn't done anything wrong. Every day it just thrills me to see the type of reasoning that the children are using. I don't know if it is important that children know negative numbers in second grade or not. I've had some questions on this. But they love it. You give them a workbook and they clap their hands. "Teacher, do we get to use the workbooks today?" And they're so fast. I have 28 in there and I only check the pages with the little colored things on them in class. And they're just lined up, they're just so quick that I can't keep them straight. In our other book they never had any double or triple number addition. At one time in one of my free periods we decided to have a relay. We had done regrouping, (big plays on the Minicomputer) but we hadn't done it without the Minicomputer so I just started making up numbers and it was just big plays in the ones place. Well you know I'd slip every once in a while and they would be over in the tens or hundreds place and they'd have to make a big play. But the idea just carried over and it was a very short time before they were all working on numbers like 20,563 plus 2,487, just reading off the answers. Now then again I teach the fast group. But in what I've taught in the past we've never even gotten into  $24+36$ . So they're just doing so great, I mean they're just so far above what I had done in the past.
- I: Are there any other main differences between this program and the other one that you taught?
- T: I like the manipulatives that the children have. I have 28 in there and there's really no discipline problem. The discipline problem is that they want more to do. But this is no big problem, they have something in their hands and they're working at it. One thing that I liked and I was concerned about it at the workshop was the Minicomputer. They're not going to carry that Minicomputer around with them. It doesn't fit in their pocket. So how are they going to work their math? It was just a matter of a few weeks after school started that I had some



## Interview 16 (continued)

of my boys say "Do I have to use that dumb computer?" because they could see it in their minds that this was a big play and they could do it without the minicomputer and they didn't want to take the time with it.

I: What is their reaction to the Minicomputer now?

T: They like it if they need it but they know when they need it and I've never required them to use it. I stressed the point that the right answer was what we were after. And whatever way that they could find it was O.K. but at the beginning of the year they all used it. But one by one they quit using it. I still have some that want it. It's a security to them. They have it to verify. You'll see them write the answer but then they'll verify it with their Minicomputer.

I: Can most of the students use the Minicomputer fairly well?

T: All of my group can.

I: What is your reaction to the Minicomputer?

T: I like it.

I: What do you think are the best aspects of CSMP?

T: The best aspects. I think it gives the children confidence in using their big numbers. They feel big. They accept it. They like it because they're doing something that their big brothers are doing. And they like the big numbers.

I: What do you think are the worst aspects?

T: Since I don't teach the slow group it's hard for me to say that there's anything that doesn't work because this is a fast group. They all do it very well and so therefore it's hard for me to say that there would be any real bad aspects about it. If I worked with a slower child I might see where there could be some improvement.

I: Do you think this program is as appropriate for slower children as other programs?

T: Well again never having taught a slow child in math I don't know. Because I've always taught the high math, I can't make any judgements. I know that the slow children that leave my homeroom to go to math are lined up ready to go. There's nothing like "Oh do we have to go to math or can we skip math today." If we have a reason that we do skip math they are upset about it. They want math.

I: How long is your math class every day?

T: Approximately 45 minutes.

I: How does this compare with class time usually spent in math?

T: Forty-five minutes, we use the same program that we had used before, the same schedule, timing and all. We just put in the CEMREL instead of the book.

I: Were the suggested times in the manual reasonable?



## Interview 16 (continued)

- T: With the top group some of them had too much time allowed. And then I also had difficulty with the fact that the children were so good that I had a tendency to see how good they could be. It would allow them to work on it ten minutes but they were still working and they were still doing it right and they still wanted to work and I would let them go overtime and work as many as they could.
- I: Did you have to repeat any lessons with your group?
- T: I repeated a couple only. And I can't remember which two I had to go back and repeat. I know on one of them they seemed a little confused and so I made a transparency and put it up on the overhead and the following day they could see it right away.
- I: Did you have to use supplementary materials?
- T: No.
- I: Did you change the order of the lessons?
- T: No I did not. Well now I take that back. I was in the hospital and a couple of times I knew I was having a substitute in and so I would go to a lesson that I thought she was more capable of handling and then I would go back. But I didn't skip any lessons completely.
- I: Did you find it was a problem to keep track of the program materials?
- T: No. There was one lesson that I was confused on. I think they produced the answers on the worksheets and I couldn't understand what they were telling me to do. I finally decided from checking the sheets that they had printed the answers on the worksheets. But this is common mistakes in printing.
- I: How did you assign the workbooks to students?
- T: Well since I had the high group, the first time I started most of the ones that were doing real well in the first average book, and the ones I saw were having difficulty I started on the 3R book. And with most of them, this is where I kept them. I only had one boy who consistently got up to the S book, but he was about the only one that got there.
- I: Did you keep track of their scores on the workbooks?
- T: I gave one mistake an A, 2 a B, 3 a C, 4 a D, 5 an E. And consistently most of them were all A's and B's. If they made anything below a B, I made them go back and do it again. If they came in consistently with 2 or 3 E's in a row I would just say "Let's go back to another workbook." Then after they'd do the simpler workbooks they could come back and do the other one and fly right on through it.
- I: Was there enough information from the workbooks and all the materials to help you decide when a student needed individual help?
- T: Well most of the time they'd just raise their hand and say "I need help." I told them "I will help you on any worksheets with any problems you're having. If you're confused then I'm here to help you." and then they'd ask me the

## Interview 16 (continued)

question. Now when it came to the workbooks then I was more reluctant to do any helping because I felt the workbook was the review of what we had done and I wanted to see what they could do. A couple of my free days I did take some fourth grade papers that a teacher had run off for her fourth grade students, double number addition, and gave them to the students and I had 98% that had a perfect score on fourth grade papers.

I: Do you think there is a need for testing materials for the teacher to evaluate the students?

T: I would like a little more guidelines in grading since our school system still requires some type of grade. It's kind of hard whenever I give a child a satisfactory in the high math group and a child in a low math group is also getting satisfactory. How do you explain to the parent?

I: About how often would you like testing materials or these guidelines to be put into effect during the year?

T: Before I always tried to schedule a test a week to cover the material that we had during the past week and then go back with similar types of problems. That was the grade that went into the grade books.

I: How well do you think your students like CSMP compared with the other math programs?

T: My students have never had the other program because they had started it in the first grade last year. They were already accustomed to it.

I: Did you have any students enter the program at the beginning of the year?

T: Yes during the late bus rider time I would spend time on the Minicomputer and I would get one of the students to help them on the Minicomputer. This seemed to be the only thing that they had difficulty with. But once they would spend two or three days doing this it was O.K.

I: What about later in the year?

T: Yes. In fact I had one boy who entered in March of this year and I started him out in the 3R workbook series. He did get up to 5R3 and in this book he had straight A's.

I: Do you think more attention should be paid to this problem of new students?

T: Yes. It would help to have some type of outline. A special kind of an introductory book that you could give that child. To hand them and work with them together as a supplementary kind of thing, like I did during the bus rider time except I had something to put my hands on. Now I usually went back to the R1 workbook and we'd work that together.

I: How extensive has parent reaction been in this program?

T: I have two of the school board members children and they were both in at conference time and they were thrilled with it.

## Interview 16 (continued)

I: Has there been any negative reaction?

T: None whatsoever. And when we had parent conferences I explained to them that we were having this as a trial program and if their child had any kind of a conflict, that they felt frustrated when they came home concerning math, I asked the parents to please contact me. And I had no one contact me.

I: Did you give any presentations about the math program to the parents or any community groups?

T: I didn't because our first grade teacher had done this and so it wasn't a new program and so therefore they were aware of it.

I: Do you think the orientation and training you received was satisfactory?

T: Yes.

I: What is the minimum preparation a second grade teacher would need to teach CSMP?

T: I don't know that I needed the full week but it sure did a lot to my morale. It happened that in our situation it wasn't completely a choice of the teacher whether we wanted to go to it or not. The first grade teacher had accepted it so therefore the second grade teachers were to take it. So when I went into the training I went into it not positive, not negative. I was just going. And I was going to try to do my best for one year. This was the attitude that I had taken. And I worked hard while I was there. I attended every class and I did all the assignments at night that they told me. And I don't think, teaching the high group I think I needed that much.

I: Which type of students in your class liked this program better?

T: I think, there were some of the children who don't like anything, you have some that would rather be at home fishing or something. But as far as the math itself this is one of the necessary evils of school. I think they liked it better than they would have just doing the regular routine work.

I: Were there any students who disliked the program for any particular reason?

T: No. I had one new student who said "All this dumb stuff, I know how to do it." But then she left for a period of time due to an illness of her grandmother and she went to another school and when she came back she walked into my room and threw her arms around me and said "I'm so glad to be back to this math class." She was really disgusted. She said "All we did was just pages and pages and pages of answers, and answers, and answers." And she was just real glad to be back. But most of the other students had already had it. So I didn't introduce it to them. They had had it in first grade so they didn't really know what any other math program was.

I: Do you have any other comments you'd like to make about the program?

T: No. Nothing that I can think of right off the top of my head. I wasn't aware of the type of questions so I didn't really know how to prepare or think of anything. I am very pleased with the workbooks and there are a few lessons I'm

## Interview 16 (continued)

not **sure** are necessary for second graders. The philosophy they told us when we were up there if they don't get it don't worry about it. You're presenting the opportunity and then the good students will grasp it and others won't anyway but don't worry about it. And so I've tried to take this attitude throughout the year.

## Interview 17

- I: Now that you have taught the CSMP program for nearly a year, what is your general impression of it?
- T: I had the average group and I feel that it has helped them because they're not as gifted as your high group but they could grasp the concept and go much farther with it than they had in the past years that I taught.
- I: Do you find that your perceptions of the program changed during the course of the year?
- T: No. I was quite enthusiastic about it when I left St. Louis. After absorbing everything I was real enthused. Math is a strong point of mine. I have always enjoyed it and so therefore to see something that could get them farther along than what they had in the past I was really excited.
- I: And you still are now?
- T: Yes.
- I: How does CSMP compare with other second grade math programs?
- T: I think it's much more advanced. I can't quite put my finger on the difference between it and other programs. I know they had some background before I got them this year and if the enthusiasm in first grade was the difference or what but I just can't say enough good things about it.
- I: What do you think are some of the best aspects of CSMP?
- T: I think it's because they can manipulate things. There's not as much book to it at this age level and that gets them excited about it. I think not having the worry of grading even though that is my only criticism. Now that I have to give them a grade I feel lost but I think this helps the children because they were motivated, enthusiastic about it although they didn't have that worry of the grade behind it.
- I: What are the worst aspects?
- T: Well that was the only criticism that I have. I would have liked to have seen the testing that they did on the children. I do have a lost feeling right now because I am filling out permanent record cards. I'd like to have an information sheet or something.
- I: About how long is your math class every day?
- T: It runs about 45 minutes.
- I: How does this compare with the class time you used to spend teaching math?
- T: It's the same schedule we had before.
- I: Did you find that the suggested times in the manual were reasonable?
- T: Yes. I found that as the year moved along I could speed it up a little bit and **would** have a little bit of time left over for the mental arithmetic.

## Interview 17 (continued)

I: Did you find any particular lessons that the times were unreasonable?

T: I don't believe so. I can't recall any off hand.

I: Did you have to repeat certain lessons?

T: There were some. This being my first year of teaching I feared that they hadn't grasped enough of it and I'd want to go back but I kept in mind what they told us not to worry about it and through experience I found that that was true.

I: Did you change the order of the lessons?

T: Not very much.

I: Did you have to use very many supplementary materials?

T: At the end of the year I used some drill work because we were going to be testing with our achievement tests and I wanted to familiarize the children with the format. I used worksheets that came from your duplicating companies but I didn't feel that it was that strong of a need. It was just to make them acquainted with the type of testing that I knew they were going to have.

I: Did you find it was a problem to keep track of the program materials?

T: No. I'm an organized person, so it fit in with my life style.

I: How did you assign the workbooks to the students?

T: Observing what they did in the past and having the average group I naturally started them out in the remedial workbooks. If they seemed to travel a little bit faster in the series I'd move them up into the next one and then if that didn't work then I'd move them back. But just by observing them and the work that they did on the worksheets, I placed them that way.

I: Did you keep track of their scores in the workbooks?

T: I wasn't aware of what method I should use. When they would finish I would check it closely and ask them to repeat the work in the workbooks but I never did fall on to a good way of grading it.

I: Was there enough information from the workbooks and the worksheets and the class activities to help you decide when a student needed individual help?

T: I would say so. Yes.

I: Do you think there is a need for testing material for the teachers to evaluate the students?

T: Yes.

I: Any specific kinds?

T: I guess this being the first year I felt lost about it. I'm sure next year having gone through the program I would be more knowledgeable of what's coming

## Interview 17 (continued)

up and what I should be looking for but they told us not to worry about that and I took them at their word. But it's hard to grade. I just felt that they all succeeded and some were stronger than others but it was very individualized so I don't like to put a letter grade on something like that.

I: How well do you think your students liked CSMP as compared with other math programs?

T: They had much more enthusiasm.

I: Which type of students like this program better?

T: Well I just had the average so I couldn't answer that question.

I: Were there any students who didn't like the program?

T: I don't believe so. I wasn't aware of it.

I: What's the students' reaction to the Minicomputer now?

T: I've found my group began to pull away from it and they didn't use it as much.

I: Can most of the students use the Minicomputer fairly well now?

T: Well as we got into the larger problems it began to be a little bit of a problem to them but there wasn't that much work involved in your lesson plans. I was tempted sometimes to want to go back and just spend a lesson on working with it. But they didn't use it as much at the end of school as they did at the first.

I: What do you think of the Minicomputer?

T: It's fascinating. This probably is the secret of the program. It seemed to create some kind of understanding the children in the past didn't have.

I: What special things did you have to do for students who entered the program at the beginning of the second grade and hadn't had it in first grade?

T: Just spend a little extra time with them. When the others were busy I would give them individual help. They watched the others and with the demonstration they seemed to pick it up rather quickly.

I: And that worked pretty well?

T: Yes.

I: Did you do any special things for the children who entered the program later in the year?

T: Well we usually started those out in the low class because they weren't quite as advanced as we were. So I didn't work with too many later in the year that were starting the program. I had one little boy that indicated that he was strong in math so I just spent extra time with him and he seemed to pick it up.

## Interview 17 (continued)

I: Were there any special problems with the arrow diagrams or the Minicomputer?

T: No. I don't recall any. He just didn't work as fast as the rest of us did. But he caught on to the program well enough.

I: Should more attention be paid to this problem of new students in the teacher's guide?

T: I believe it would help if we had maybe an outline of lessons that would help a new student coming in. Being a new teacher I didn't know which ones I should stress or what I should pull out and introduce. So this would help.

I: What type of special help did you give to the slower students?

T: Well having the average group I couldn't say. Unless it would be just giving the extra individual help.

I: How extensive was parent reaction?

T: Just that they were fascinated with the ability of their children to do the kind of work that they were doing. I didn't have any bad reactions.

I: Were there any presentations about the math program for the parents or community groups?

T: They were aware of it from last year.

I: Do you think the orientation and training you received was satisfactory for you?

T: Yes.

I: What do you think is the minimum preparation a second grade teacher would need?

T: Well I wouldn't have wanted to go into it without the week's workshop. It put me in the frame of mind that I needed to be in and I think at least a week.

I: O.K. Do you have any other comments you'd like to make?

T: No. Just that I'd like to see the testing.



## Interview 18

- I: Now that you have taught the CSMP program for nearly a year what is your general impression of it?
- T: I think it's good. I think the children enjoy it. I teach the slow group and they grasp it much quicker than they did the other way.
- I: In what ways, if any, did you find your perceptions of the program changed over the course of the year?
- T: Well, I think I was enthusiastic about it before we began the program. I taught the low math and I felt that they weren't making any progress at all but this year I feel that they have made progress. And they have learned things that weren't even presented to them before.
- I: How does CSMP compare with the other second grade math programs that you have used?
- T: This one is far superior to the one we were using. Actually it teaches much more.
- I: Are there any other main differences between this program and others besides the topics covered?
- T: I think it involves all of the children and they are interested. They aren't turned off by the drill and even though there is drill, it's a different type of drill. I think it has many advantages over the other.
- I: What do you think are the best aspects of CSMP?
- T: I think the teacher after she has taught it, can probably gear it to her class. I don't think you will have as much trouble trying to drill once you have gone through the program one time. We'd know they were going to get it again. But still I think you can gear it even to the slower students. Maybe you have to take longer presenting it because you have to make individual presentations to a certain extent.
- I: What do you think are the worst aspects?
- T: Well possibly pleasing the parents with grading since the program is not too involved in grading. But I think that that's something the parents will have to be educated to, that grades aren't so important; it's whether they are learning or not.
- I: How extensive has parent reaction been to the program?
- T: I think most of them have been pleased with it. The ones that I have talked to have been. I think they would have been disappointed had we gone back to the conventional math. I think they feel that they are learning more.
- I: Have there been any "presentations" about the math program for the parents or community groups?

## Interview 18 (continued)

- T: Well last year we did have but this year we haven't had any. Last year at the teacher's meeting and then for the school board one of the teachers gave some lessons and presented materials.
- I: About how long is your math class every day?
- T: We are supposed to have 45 minutes but we do change classes, we group: low, average and the high. By the time we change probably about 35 minutes. And we have that much time at least, and we do have it every day.
- I: How does this compare with class time usually spent in teaching math?
- T: It's the same. Our periods were that way so we continued that way this year. Most of the time when you finish a lesson and you don't have time to start another lesson you can do something like roads or arrow pictures.
- I: Were the suggested times in the manual reasonable?
- T: Some of them were rather short. I think it would depend upon your class size. That's why I said I think a teacher that has taught it would be able to adjust the time without following the manual exactly. It would depend upon your class size, and environment, how quickly you got to work and how much difficulty they seem to have in grasping what you are doing. You might have to give a few more examples. I think it would depend on the ability.
- I: Did you have to repeat certain lessons?
- T: No. I went right through the lessons, but as I say, I couldn't cover all the material because I had 20 in the class and some of them went to the learning disability teacher. So therefore you had to teach them individually and it took longer, but you have to provide something for the better ones to do. That's just normal with any book that you have or with anything that you were teaching. You have to make adjustments for those to get through and those that you have to give a little more time or it takes a little longer to understand. I think to keep the ones that are extra slow from feeling frustrated that you have to let them do some of the work.
- I: Did you have to use very many supplementary materials with these kids?
- T: No. Not too many because as I say, you can just add a few more examples and give them a sheet of newsprint even and make a few more examples and they will go ahead. In fact I think that was good that they learned to write the numbers for themselves.
- I: Did you change the order of the lessons?
- T: No.
- I: You followed the sequence?
- T: I followed the sequence right through. As I say I didn't cover the materials that the others covered.
- I: Did you find it ~~was~~ a problem to keep track of the program materials, the workbooks, worksheets, and all the manipulatives?

## Interview 18 (continued)

T: No. I think it's pretty well arranged. I mean I had no problem. If you followed the teacher's guide then you can see what you were going to do.

I: How did you assign workbooks to the students?

T: To begin with and since I had the slow group I gave them all remedials. If some of them finished quickly then I gave them the average because I thought that they needed to go ahead. Actually I never used anything above the average because I didn't have any students that I thought were that good.

I: Did you keep track of their scores on the workbooks?

T: To a certain extent. I know that they progressed and you can tell.

I: Was there enough information from the workbooks, worksheets and the class activities to help you decide when a student needed individual help?

T: I think so. I could tell when they needed extra help because they would quickly ask you "What is this?" because they wanted to do it and they just didn't sit there.

I: Do you think there is a need for testing materials for the teacher to evaluate the students to be incorporated into the program?

T: Oh, yes. I think that that's one of the shortcomings. I think it would be well if you had something where you put all of their names and then maybe just certain test scores.

I: What special things did you do for the students who entered the program at the beginning of the second grade?

T: Actually just taught them what the Minicomputer was and how to use it and then they seem to be able to pick it up on their own because with the workbooks they had a little bit of everything in them. That was the easiest way to do it for me.

I: Did it work fairly well?

T: Yes. I think so.

I: Do you think more attention should be paid to this problem of new students in the teacher's guide?

T: You might mention that that would be one way they could pick them up. Of course it depends on your students and their ability. But they can do it.

I: Do you think this program is as appropriate for slower students as other programs?

T: Yes. I think so. I think more so really. Because it's more fun and I think, they try harder.

I: How appropriate is the spiral approach for slower students?

T: I think that's the same with anyone. If you give them too much of any one thing they get frustrated and then they get bored so I think it's good for them too. Actually all of your teaching is a spiral.

## Interview 18 (continued)

I: How well do you think your students like CSMP as compared with other math programs?

T: I really don't know because they've never had any other. They have taken the arithmetic books home for fun, but I think they like this other better.

I: What type of students like this program better?

T: I don't really know. I think the ones that aren't interested or are bored are not quite so bored. As I say this is my first year I've taught it. I'm not sure what to say.

I: Were there any types of students who didn't like the program?

T: I think they all liked it really. That's why it would be hard for me to say who liked it better than another one. Because they all seem to enjoy it. They liked it when we were going to work with Minicomputers and they like the idea of the larger numbers.

I: What is the students' reaction to the Minicomputer now at the end of the year?

T: Well they don't really use them as much because they can go ahead, even the slow ones. They go ahead and do 2 column addition without a Minicomputer. Somebody said there wasn't enough drill but if they have learned that, they have had to learn it by drill but it wasn't formal drill.

I: Can most of the students use the Minicomputer fairly well now?

T: Yes. Most of them do. Even the ones that came in the middle of the year. Place value wasn't nearly the problem that it has been in the past having used the Minicomputer.

I: What do you think of the Minicomputer?

T: I think it is a good thing because I don't think it slows them down nearly as much as taking a pencil and making a dot for each of the numbers. That's why I think the use of the number line and the Minicomputer are much better because they are crutches the students won't carry with them all of the time, but they carry the others. To them it sounds big too. They see calculators and they hear about computers and I think it's a good thing.

I: Do you think the orientation and training you received was satisfactory for you?

T: Yes. I believe so. I think anything that you participate in is more beneficial.

I: What is the minimum preparation a second grade teacher would need to successfully teach CSMP?

T: I think the program we had was adequate. I don't think you could have much less than that. I think a teacher could teach it without having any if they would read the guide and follow the instructions. But I don't think it would be as meaningful to you, I wouldn't say it couldn't be taught - it would be the same as any textbook or something. But when you see people doing something then you'll be able to do it better yourself.

## Interview 18 (continued)

I: Do you have any other comments you'd like to make?

T: No, but I'm looking forward to teaching it next year. I think that most teachers would.

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